

ABSTRACTS

Table of Contents	
PELVIC GIRDLE	2
CERVICAL SPINE	15
CRANIUM/TMJ	19
HEADACHES	32
GLENOHUMERAL/SHOULDER	35
KNEE	41
MANUAL THERAPY/STRETCHING/MUSCLES STM	48
CFS/BET	52
RUNNING GAIT	55
PAIN	56
NEUROLOGICAL CONDITIONS	61

2. LBP**Impact of weather**

Rheumatol Int. 2016 Jan 12.

Does weather affect daily pain intensity levels in patients with acute low back pain? A prospective cohort study.

Duong V¹, Maher CG², Steffens D³, Li Q², Hancock MJ¹.
Author information

Abstract

The aim of this study was to investigate the influence of various weather parameters on pain intensity levels in patients with acute low back pain (LBP). We performed a secondary analysis using data from the PACE trial that evaluated paracetamol (acetaminophen) in the treatment of acute LBP. Data on 1604 patients with LBP were included in the analysis. Weather parameters (precipitation, temperature, relative humidity, and air pressure) were obtained from the Australian Bureau of Meteorology. Pain intensity was assessed daily on a 0-10 numerical pain rating scale over a 2-week period. A generalised estimating equation analysis was used to examine the relationship between daily pain intensity levels and weather in three different time epochs (current day, previous day, and change between previous and current days). A second model was adjusted for important back pain prognostic factors. The analysis did not show any association between weather and pain intensity levels in patients with acute LBP in each of the time epochs. There was no change in strength of association after the model was adjusted for prognostic factors. Contrary to common belief, the results demonstrated that the weather parameters of precipitation, temperature, relative humidity, and air pressure did not influence the intensity of pain reported by patients during an episode of acute LBP.

KEYWORDS:

Cohort study; Low back pain; Pain intensity; Weather
PMID:26759130

Management of

JAMA Intern Med. 2016 Jan 11:1-10. doi: 10.1001/jamainternmed.2015.7431.

Prevention of Low Back Pain: A Systematic Review and Meta-analysis.

Steffens D¹, Maher CG², Pereira LS³, Stevens ML², Oliveira VC³, Chapple M⁴, Teixeira-Salmela LF³, Hancock MJ⁴.

Author information

Abstract**IMPORTANCE:**

Existing guidelines and systematic reviews lack clear recommendations for prevention of low back pain (LBP).

OBJECTIVE:

To investigate the effectiveness of interventions for prevention of LBP.

DATA SOURCES:

MEDLINE, EMBASE, Physiotherapy Evidence Database Scale, and Cochrane Central Register of Controlled Trials from inception to November 22, 2014.

STUDY SELECTION:

Randomized clinical trials of prevention strategies for nonspecific LBP.

DATA EXTRACTION AND SYNTHESIS:

Two independent reviewers extracted data and assessed the risk of bias. The Physiotherapy Evidence Database Scale was used to evaluate the risk-of-bias. The Grading of Recommendations Assessment, Development, and Evaluation system was used to describe the quality of evidence.

MAIN OUTCOMES AND MEASURES:

The primary outcome measure was an episode of LBP, and the secondary outcome measure was an episode of sick leave associated with LBP. We calculated relative risks (RRs) and 95% CIs using random-effects models.

RESULTS:

The literature search identified 6133 potentially eligible studies; of these, 23 published reports (on 21 different randomized clinical trials including 30 850 unique participants) met the inclusion criteria. With results presented as RRs (95% CIs), there was moderate-quality evidence that exercise combined with education reduces the risk of an episode of LBP (0.55 [0.41-0.74]) and low-quality evidence of no effect on sick leave (0.74 [0.44-1.26]). Low- to very low-quality evidence suggested that exercise alone may reduce the risk of both an LBP episode (0.65 [0.50-0.86]) and use of sick leave (0.22 [0.06-0.76]). For education alone, there was moderate- to very low-quality evidence of no effect on LBP (1.03 [0.83-1.27]) or sick leave (0.87 [0.47-1.60]). There was low- to very low-quality evidence that back belts do not reduce the risk of LBP episodes (1.01 [0.71-1.44]) or sick leave (0.87 [0.47-1.60]). There was low-quality evidence of no protective effect of shoe insoles on LBP (1.01 [0.74-1.40]).

CONCLUSION AND RELEVANCE:

The current evidence suggests that exercise alone or in combination with education is effective for preventing LBP. Other interventions, including education alone, back belts, and shoe insoles, do not appear to prevent LBP. Whether education, training, or ergonomic adjustments prevent sick leave is uncertain because the quality of evidence is low.

PMID: 26752509

5. SURGERY

Foot drop timeframe

February 15, 2016 Volume 361, Pages 133–136

Preoperative motor strength and time to surgery are the most important predictors of improvement in foot drop due to degenerative lumbar disease

Mohamed Macki¹ Sbaa Syeda¹ Panagiotis Kerezoudis Ziya L. Gokaslan Ali Bydon Mohamad Bydon

Highlights

- We measured prognostic factors of foot drop improvement after lumbar surgery.
- Median time to foot drop improvement was 6 weeks post-op.
- Preoperative muscle strength is significant predictor of foot drop improvement.
- Palsy duration is another significant predictor of foot drop improvement.

Abstract

Objective

Palsy of dorsiflexion, or foot drop, may be due to degenerative lumbar disease and amenable to posterior spinal decompression. The objective of this study is to measure prognostic factors of and time to foot drop improvement after posterior lumbar decompression.

Methods

We retrospectively reviewed 71 patients undergoing first-time, posterior lumbar decompression for foot drop due to degenerative spinal disease. Patient sex, age, comorbidities (Charlson Comorbidity Index), preoperative anterior tibialis strength (manual muscle testing, MMT), and duration of foot drop were ascertained from clinical notes. Prognostic factors affecting foot drop improvement were calculated with a discrete time proportional hazards model, in which follow-up times and outcome measures were binned into six time intervals: 1 week, 6 weeks, 3 months, 6 months, 1 year, and ≥ 1 year.

Results

Of the 71 patients, the mean age was 54.6 ± 16.0 years, and 66.2% ($n = 47$) were males. The mean Charlson Comorbidity Index was 2.42. During a mean follow-up of 30.4 months, dorsiflexion function improved postoperatively in 73.2% ($n = 52$) of patients. The median time to surgery from onset of foot drop was within 6 weeks, and the median preoperative MMT strength of patients with foot drop improvement was 3. Following a discrete-time proportional hazards model, duration of anterior tibialis palsy ($HR = 0.67$, $P = 0.004$) and preoperative muscle strength ($HR = 1.10$, $P = 0.010$) were significant predictors of foot drop improvement. Following an adjusted Kaplan–Meier analysis, the median time to foot drop improvement was within 6 weeks of surgical intervention.

Conclusions: Preoperative muscle strength and palsy duration were statistically significant predictors of foot drop improvement. Furthermore, the median time to improvement was 6 weeks.

Keywords: Foot drop, Degenerative lumbar disease, Spine surgery, Motor strength improvement

CBT and fusion

Spine (Phila Pa 1976). 2016 Jan;41(1):18-25. doi: 10.1097/BRS.0000000000001254.

Preoperative Cognitive-Behavioral Patient Education Versus Standard Care for Lumbar Spinal Fusion Patients: Economic Evaluation Alongside a Randomized Controlled Trial.

Rolving N¹, Sogaard R, Nielsen CV, Christensen FB, Bünger C, Oestergaard LG.
Author information

Abstract

STUDY DESIGN:

A cost-effectiveness analysis conducted alongside a randomized clinical trial.

OBJECTIVE:

To assess the cost-effectiveness of a preoperative cognitive-behavioral therapy (CBT) intervention compared to usual care for patients undergoing lumbar spinal fusion surgery (LSF).

SUMMARY OF BACKGROUND DATA:

The clinical effectiveness of a preoperative CBT intervention for patients undergoing LSF has been investigated in a randomized clinical trial. Economic evaluation is however essential for decision makers to make informed choices regarding allocation of scarce resources.

METHODS:

90 patients undergoing LSF were randomly allocated to usual care (control group) or usual care plus a preoperative CBT intervention (CBT group). Outcome parameters included quality-adjusted life years (QALY), based on the EQ-5D, and pain-related disability, based on the Oswestry disability index (ODI). Health care use and productivity loss were estimated from national registers.

RESULTS:

One year after LSF the estimated QALY was significantly better for the CBT group with 0.710 (95% CI 0.670; 0.749) versus 0.636 (95% CI 0.5573; 0.687). For the ODI, the CBT group reported significantly larger disability reductions at 3 months (P=0.003) and 6 months (P=0.047), but not at 1 year (P=0.082). There was no difference in the overall costs of the two groups (-&OV0556;89 (95% CI -12,080; 11,902)), leading to a 70% probability of the CBT intervention being cost-effective at a willingness-to-pay of &OV0556;40,000 for one additional QALY. For an additional gain of 15 ODI points the probability was 90% at a threshold of &OV0556;10,000. These results remained largely unaffected by relevant sensitivity analyses, confirming the robustness of findings.

CONCLUSION:

Preoperative CBT appears to be more effective and cost neutral when considering the overall health care sector and labor market perspective, supporting the implementation of preoperative CBT in the course of treatment for LSF surgery in a Danish context.

LEVEL OF EVIDENCE: 2

PMID:26536443

Importance on fusion

Spine (Phila Pa 1976). 2016 Jan;41(1):9-17. doi: 10.1097/BRS.0000000000001113.

What Is the Clinical Relevance of Radiographic Nonunion After Single-Level Lumbar Interbody Arthrodesis in Degenerative Disc Disease?: A Meta-Analysis of the YODA Project Database.

Noshchenko A¹, Lindley EM, Burger EL, Cain CM, Patel VV.

Author information

Abstract

STUDY DESIGN:

Meta-analysis of 4 randomized controlled clinical trials (RCTs).

OBJECTIVE:

The aim of the study was to determine if patients with degenerative disc disease who achieve radiographic fusion after single-level lumbar interbody arthrodesis have better clinical outcomes than patients with radiographic pseudarthrosis at 12 and 24 months postoperative.

SUMMARY OF BACKGROUND DATA:

The clinical relevance of successful fusion after lumbar arthrodesis with recombinant human bone morphogenetic protein-2 or iliac crest bone autograft has recently been questioned in the literature.

METHODS:

Individual patient-level data of 4 RCTs were obtained from the Yale University Open Data Access Project project and analyzed. Clinical outcomes (Oswestry Disability Index [ODI]; Numeric Rating Scales [NRSs] for back and leg pain) were compared between patients with radiographically confirmed fusion and those with radiographic nonunion 1 and 2 years postoperative. The results of each study were first analyzed separately, and then were pooled by meta-analysis. The GRADE approach was applied to evaluate the level of evidence.

RESULTS:

A total of 496 patients with clinical and radiographic data at 1- and 2-year follow-ups were identified. Of these, 5.5% (95% confidence interval: 3.7; 8.3) had radiographic nonunion which did not require reoperation. Patients with fusion had better improvements in ODI ($P<0.001$) and NRS back pain scores ($P<0.001$). The overall percentage of fused patients with ODI and NRS back pain scores that exceeded the criteria for minimal clinically important differences was also significantly higher than that of patients with nonunion (ODI, odds ratio [OR]=2.7, $P=0.019$; NRS back pain, OR=3.5, $P=0.033$). The predictive values of fusion for clinical outcomes, however, were poor, with low specificity and low negative predictive values.

CONCLUSION:

The presence of radiographic fusion is clinically significant, as patients with fusion had better clinical outcomes at 1 and 2 years postoperative than those with nonunion; however, patient-centered clinical outcomes should also be taken into consideration as independent, complimentary variables when assessing treatment success.

LEVEL OF EVIDENCE:

1.

PMID:

26274529

Fusion and rehab

Spine (Phila Pa 1976). 2016 Jan;41(1):E28-36. doi: 10.1097/BRS.0000000000001132.

Rehabilitation Following Lumbar Fusion Surgery: A Systematic Review and Meta-Analysis.

Greenwood J¹, McGregor A, Jones F, Mullane J, Hurley M.
Author information

Abstract

STUDY DESIGN:

A systematic review with meta-analysis.

OBJECTIVE:

The aim of this study was to conduct a systematic review and meta-analysis of current evidence evaluating the effectiveness of rehabilitation following lumbar fusion surgery (LFS).

SUMMARY OF BACKGROUND DATA:

LFS for the management of lower back pain, with(out) neurogenic leg pain, is increasing as the population ages. Clinical outcomes commonly lag behind surgical outcomes and 40% of patients experience significant back-related disability 12 months after LFS. Identifying rehabilitation strategies to improve function and quality of life following LFS is important.

METHODS:

A systematic review of databases were searched, including MEDLINE, CINAHL, and grey literature. Studies identified were screened for inclusion by title and abstract. Full text of eligible/potentially eligible studies was evaluated against predetermined eligibility criteria. Included studies were subjected to critical appraisal and risk of bias evaluation. The GRADE approach to quality of evidence was utilized. A meta-analysis comparing usual care with "complex rehabilitation," comprising exercise and cognitive behavioral therapy, for outcomes relating to pain, disability, fear of movement, and mental health was conducted at short and longer term (<3 and >12 months postsurgery) time points.

RESULTS:

Three studies were identified for the systematic review and 2 included in the meta-analysis (n=237, female=62%, mean age=55). Low-quality evidence suggests that "complex rehabilitation" provides short-term improvement in disability [effect size, -0.85, 95% confidence interval (95% CI), -1.41 to -0.29] and fear avoidance behavior (-1.07, 95% CI -1.33, -0.80), compared with usual care. Low-quality evidence exists favoring "complex rehabilitation" over usual care for longer term disability (-0.84, 95% CI -1.11 to -0.58) and fear avoidance behavior (-1.40, 95% CI -1.69 to -1.12).

CONCLUSIONS:

A small number of low-quality studies suggest that "complex rehabilitation" reduces short and long-term disability and fear avoidance behavior following LFS. More, high-quality research is required to confirm the effectiveness of "complex rehabilitation" programs.

LEVEL OF EVIDENCE: 1.

PMID: 26555833

7. PELVIC ORGANS/WOMAN'S HEALTH

Conception

Trying to conceive soon after a pregnancy loss may increase chances of live birth

NIH News, 01/13/2016

NIH study finds no reason for delaying pregnancy attempts after a loss without complications. Couples who attempt to conceive within three months after losing an early pregnancy, defined as less than 20 weeks gestation, have the same chances, if not greater, of achieving a live birth than those who wait for three months or more, according to a National Institutes of Health study. This finding, published in *Obstetrics & Gynecology*, questions traditional advice that couples should wait at least three months after a loss before attempting a new pregnancy. The World Health Organization, for example, recommends waiting a minimum of six months between a pregnancy loss and a subsequent attempt. In the current study, researchers analyzed data from the Effects of Aspirin in Gestation and Reproduction (EAGeR) trial, a multisite block-randomized, double-blinded, placebo-controlled trial that took place from 2007 to 2011. The trial, which evaluated the effect of daily low-dose aspirin on reproductive outcomes in women with a history of pregnancy loss, enrolled 1,228 women aged 18 to 40 years. NICHD investigators concentrated on 1,083 of these women, more than 99 percent of whom had lost a pregnancy at less than 20 weeks gestation. None of the women had either of two potential complications of pregnancy: a tubal (ectopic) pregnancy or a molar pregnancy (growth of abnormal fetal tissue in the uterus). The participants were followed for up to six menstrual cycles and, if they became pregnant, until the outcome of their pregnancy was known. The researchers found that more than 76 percent of the women attempted to conceive within 3 months after losing a pregnancy. Compared to those who waited longer, this group was more likely to become pregnant (69 percent vs. 51 percent) and to have a pregnancy leading to a live birth (53 percent vs. 36 percent). The investigators did not observe any increase in the risk of pregnancy complications in this group.

Fish consumption and infant health

Am J Epidemiol. 2016 Jan 5. pii: kwv195.

Maternal Consumption of Seafood in Pregnancy and Child Neuropsychological Development: A Longitudinal Study Based on a Population With High Consumption Levels.

Julvez J, Méndez M, Fernandez-Barres S, Romaguera D, Vioque J, Llop S, Ibarluzea J, Guxens M, Avella-García C, Tardón A, Riaño I, Andiarena A, Robinson O, Arijia V, Esnaola M, Ballester F, Sunyer J.

Abstract

Seafood consumption during pregnancy is thought to be beneficial for child neuropsychological development, but to our knowledge no large cohort studies with high fatty fish consumption have analyzed the association by seafood subtype. We evaluated 1,892 and 1,589 mother-child pairs at the ages of 14 months and 5 years, respectively, in a population-based Spanish birth cohort established during 2004-2008. Bayley and McCarthy scales and the Childhood Asperger Syndrome Test were used to assess neuropsychological development. Results from multivariate linear regression models were adjusted for sociodemographic characteristics and further adjusted for umbilical cord blood mercury or long-chain polyunsaturated fatty acid concentrations. Overall, consumption of seafood above the recommended limit of 340 g/week was associated with 10-g/week increments in neuropsychological scores. By subtype, in addition to lean fish, consumption of large fatty fish showed a positive association; offspring of persons within the highest quantile (>238 g/week) had an adjusted increase of 2.29 points in McCarthy general cognitive score (95% confidence interval: 0.42, 4.16). Similar findings were observed for the Childhood Asperger Syndrome Test. Beta coefficients diminished 15%-30% after adjustment for mercury or long-chain polyunsaturated fatty acid concentrations.

Consumption of large fatty fish during pregnancy presents moderate child neuropsychological benefits, including improvements in cognitive functioning and some protection from autism-spectrum traits.

KEYWORDS: autistic spectrum; fatty acids; mercury; neuropsychological development; population-based birth cohorts; pregnancy; seafood intake
PMID:26740026

Impact of pacifier

Neurogastroenterol Motil. 2016 Jan 4. doi: 10.1111/nmo.12748.

Effects of pacifier and taste on swallowing, esophageal motility, transit, and respiratory rhythm in human neonates.

Shubert TR¹, Sitaram S¹, Jadcherla SR^{1,2}.

Author information

Abstract

BACKGROUND:

Pacifier use is widely prevalent globally despite hygienic concerns and uncertain mechanistic effects on swallowing or airway safety.

AIMS:

The effects of pacifier and taste interventions on pharyngo-esophageal motility, bolus transit, and respiratory rhythms were investigated by determining the upper esophageal sphincter (UES), esophageal body, esophagogastric junction (EGJ) motor patterns and deglutition apnea, respiratory rhythm disturbances, and esophageal bolus clearance.

METHODS:

Fifteen infants (six males; median gestation 31 weeks and birth weight 1.4 kg) underwent high-resolution impedance manometry at 43 (41-44) weeks postmenstrual age. Manometric, respiratory, and impedance characteristics of spontaneous swallows, pacifier-associated dry swallowing and taste (pacifier dipped in 3% sucrose)-associated swallowing were analyzed. Linear mixed and generalized estimating equation models were used. Data are presented as mean \pm SEM, %, or median (IQR).

KEY RESULTS:

Pharyngo-esophageal motility, respiratory, and impedance characteristics of 209 swallows were analyzed (85 spontaneous swallows, 63 pacifier- swallows, 61 taste- swallows). Basal UES and EGJ pressures decreased upon pacifier ($p < 0.05$) and taste interventions ($p < 0.05$); however, esophageal motility, respiratory rhythm, and impedance transit characteristics were similar with both interventions.

CONCLUSIONS & INFERENCES:

Oral stimulus with pacifier or taste interventions decreases UES and EGJ basal pressure, but has no effects on pharyngo-esophageal motility, airway interactions, or esophageal bolus transit. A decrease in central parasympathetic-cholinergic excitatory drive is likely responsible for the basal effects.

KEYWORDS: esophageal pressure topography; esophagogastric junction; high-resolution impedance manometry; upper esophageal sphincter

PMID: 26727930

Infant intestinal health

JAMA Pediatr. 2016 Jan 11:1-8. doi: 10.1001/jamapediatrics.2015.3732.

Association of Cesarean Delivery and Formula Supplementation With the Intestinal Microbiome of 6-Week-Old Infants.

Madan JC¹, Hoen AG², Lundgren SN³, Farzan SF⁴, Cottingham KL⁵, Morrison HG⁶, Sogin ML⁶, Li H⁷, Moore JH⁸, Karagas MR⁹.

Author information

Abstract

IMPORTANCE: The intestinal microbiome plays a critical role in infant development, and delivery mode and feeding method (breast milk vs formula) are determinants of its composition. However, the importance of delivery mode beyond the first days of life is unknown, and studies of associations between infant feeding and microbiome composition have been generally limited to comparisons between exclusively breastfed and formula-fed infants, with little consideration given to combination feeding of both breast milk and formula.

OBJECTIVE: To examine the associations of delivery mode and feeding method with infant intestinal microbiome composition at approximately 6 weeks of life.

DESIGN, SETTING, AND PARTICIPANTS: Prospective observational study of 102 infants followed up as part of a US pregnancy cohort study.

EXPOSURES: Delivery mode was abstracted from delivery medical records, and feeding method prior to the time of stool collection was ascertained through detailed questionnaires.

MAIN OUTCOMES AND MEASURES: Stool microbiome composition was characterized using next-generation sequencing of the 16S rRNA gene.

RESULTS: There were 102 infants (mean gestational age, 39.7 weeks; range, 37.1-41.9 weeks) included in this study, of whom 70 were delivered vaginally and 32 by cesarean delivery. In the first 6 weeks of life, 70 were exclusively breastfed, 26 received combination feeding, and 6 were exclusively formula fed. We identified independent associations between microbial community composition and both delivery mode ($P < .001$; $Q < .001$) and feeding method ($P = .01$; $Q < .001$). Differences in microbial community composition between vaginally delivered infants and infants delivered by cesarean birth were equivalent to or significantly larger than those between feeding groups ($P = .003$). Bacterial communities associated with combination feeding were more similar to those associated with exclusive formula feeding than exclusive breastfeeding ($P = .002$). We identified 6 individual bacterial genera that were differentially abundant between delivery mode and feeding groups.

CONCLUSIONS AND RELEVANCE: The infant intestinal microbiome at approximately 6 weeks of age is significantly associated with both delivery mode and feeding method, and the supplementation of breast milk feeding with formula is associated with a microbiome composition that resembles that of infants who are exclusively formula fed. These results may inform feeding choices and shed light on the mechanisms behind the lifelong health consequences of delivery and infant feeding modalities.

PMID:26752321

Vit D and pre menstrual

J Pediatr Adolesc Gynecol. 2015 Dec 24. pii: S1083-3188(15)00444-1. doi: 10.1016/j.jpag.2015.12.006.

Vitamin D Supplementation on Premenstrual Syndrome-Related Mood Disorders in Adolescents with Severe Hypovitaminosis D.

Tartagni M¹, Cicinelli MV¹, Tartagni MV², Alrasheed H³, Matteo M¹, Baldini D³, De Salvia M¹, Loverro G¹, Montagnani M⁴.

Author information

Abstract

STUDY OBJECTIVE:

Premenstrual syndrome (PMS) may become severe enough to interfere with normal interpersonal relationships. This study was planned to assess whether administration of vitamin D (200.000 I.U. at first, followed by 25.000 I.U. every 2 weeks) for a 4 months period might be able to lessen the appearance and the intensity of mood disorders associated with PMS in young girls with severe hypovitaminosis D.

DESIGN:

and Participants - One hundred-fifty eight young girls (15-21 years old) with PMS-related severe symptoms of the emotional and cognitive domains and low serum 25-hydroxycholecalciferol (25-OH-D) levels (≤ 10 ng/mL) were randomly assigned to two treatment groups and treated for 4 months with vitamin D (GROUP 1; n = 80) or placebo (GROUP 2; n = 78). Clinical and hormonal effects were compared between the two groups.

RESULTS:

In patients from GROUP 1 - Vitamin D, levels of vitamin D reached the normal range (35-60 ng/ml) after the first month and remained stable throughout the whole study. At the end of treatment anxiety score decreased from 51 to 20 ($P < 0.001$ vs. baseline); irritability score declined from 130 to 70 ($P < 0.001$ vs. baseline). Crying easily and sadness decreased by a score of 41 and 51 to a score of 30 and 31, respectively ($P < 0.001$). For disturbed relationships, the score decreased from 150 to 70 ($P < 0.001$). Conversely, no appreciable changes were noted in symptom intensity from patients of GROUP 2 - Placebo. The frequency of adverse events (nausea and constipation) was not different between participants of GROUP 1 and GROUP 2.

CONCLUSIONS:

Based on present findings, vitamin D therapy can be proposed as a safe, effective and convenient method for improving the quality of life in young women with severe hypovitaminosis D and concomitant mood disorders associated to PMS.

KEYWORDS: Premenstrual syndrome (PMS); Vitamin D; adolescents; mood disorders
PMID: 26724745

8. VISCERA

Transit times

Neurogastroenterol Motil. 2016 Jan 4. doi: 10.1111/nmo.12713.

Regional gastrointestinal transit times in severe ulcerative colitis.

Haase AM¹, Gregersen T¹, Christensen LA¹, Agnholt J¹, Dahlerup JF¹, Schlageter V², Krogh K¹.
Author information

Abstract

BACKGROUND:

Gastrointestinal (GI) dysmotility may present secondary to inflammatory bowel disease. The main aim of this study was to investigate GI motility in ulcerative colitis (UC) patients during severe disease activity.

METHODS:

Twenty patients with severe UC were studied with a novel telemetric capsule system (3D-Transit) designed for minimally invasive, ambulatory assessment of total and regional GI transit times. Ten patients were available for follow-up during remission. Data were compared to those of 20 healthy subjects (HS).

KEY RESULTS:

Total GI transit time was significantly longer in patients with severe UC (median 44.5 h [range 9.9-102.7 h]) than in HS (median 27.6 h [range 9.6-56.4 h]) ($p = 0.032$). Additionally, during severe UC, transit time was prolonged through the proximal colon ($p = 0.003$) and there were strong trends toward longer than normal small intestinal transit time (HS: median 4.9 h [range 3.4-8.3 h] vs severe UC patients: median 5.9 h [range 3.9-11.9 h]; $p = 0.053$) and colorectal transit times (HS: median 18.2 h [range 1.5-43.7] vs severe UC patients: median 34.9 h [range 0.4-90.9 h]; $p = 0.056$). Our data further indicate that total GI and colorectal transit times may be prolonged in UC during early remission.

CONCLUSIONS & INFERENCES: Total GI transit times are significantly prolonged during severe UC.

KEYWORDS: capsule; gastrointestinal motility; transit times; ulcerative colitis
PMID: 26729638

Smoking and crohn's disease

Aliment Pharmacol Ther. 2016 Jan 7. doi: 10.1111/apt.13511.

Systematic review with meta-analysis: the adverse effect of tobacco smoking on the natural history of Crohn's disease.

To N^{1,2}, Gracie DJ^{1,2}, Ford AC^{1,2}.

Author information

Abstract

BACKGROUND:

Tobacco smoking is a well-established risk factor for the development of Crohn's disease, and this may lead to a more complicated disease course. However, recent evidence suggests that many patients with Crohn's disease are unaware of this fact.

AIM:

To perform a systematic review and meta-analysis of the effects of smoking on disease course in Crohn's disease.

METHODS:

A search of MEDLINE, EMBASE and EMBASE classic was carried out (up to July 2015) to identify observational studies reporting data on smoking and rates of surgery or flares of disease activity in patients with Crohn's disease. Dichotomous data were pooled to obtain odds ratios (ORs) for flares of disease activity or need for surgery, with 95% confidence intervals (CIs).

RESULTS:

The search identified 33 eligible studies. Compared with nonsmokers, smokers had increased odds of flare of disease activity (OR, 1.56; 95% CI, 1.21-2.01), flare after surgery (OR, 1.97; 95% CI, 1.36-2.85), need for first surgery (OR, 1.68; 95% CI, 1.33-2.12) and need for second surgery (OR, 2.17; 95% CI, 1.63-2.89). The odds of these outcomes among ex-smokers diminished upon smoking cessation, with ORs comparable to those among nonsmokers and, in the case of flare or second surgery, significantly lower than smokers.

CONCLUSIONS:

Smokers with Crohn's disease have a more complicated disease course than nonsmokers, and quitting smoking may ameliorate this. Patients should be reminded of the detrimental effects of smoking on the course of their disease, and smoking cessation advice should be provided to reduce disease burden and costs in these patients.

PMID:26749371

10 A. CERVICAL SPINE**Trauma**

Eur J Orthop Surg Traumatol. 2015 Dec 22.

Relationship between magnetic resonance imaging findings and spinal cord injury in extension injury of the cervical spine.

Song KJ¹, Ko JH¹, Choi BW².

Author information

Abstract

OBJECTIVE:

The purpose of this study was to determine the relationship between magnetic resonance imaging (MRI) findings and neurologic symptoms in cervical spine extension injury and to analyze the MRI parameters associated with neurologic outcome.

MATERIALS AND METHODS:

This study included 102 patients with cervical spine extension injury, whose medical records and MRI scans at the time of injury were available. Quantitative MRI parameters such as maximum spinal canal compression (MSCC), maximum cord compromise (MCC), and lesion length showing intramedullary signal changes were measured. Furthermore, intramedullary hemorrhage, spinal cord edema, and soft tissue damage were evaluated. Fisher's exact test was used for a cross-analysis between the MRI findings and the three American Spinal Injury Association category groups depending on the severity level of neurologic injury: complete (category A), incomplete (categories B-D), and normal (category E).

RESULTS:

MSCC accounted for 23.05, 19.5, and 9.94 % for the complete, incomplete, and normal AIS categories, respectively, without showing statistically significant differences ($P = 0.085$). MCC was noted in 22.05, 15.32, and 9.2 %, respectively, with the complete-injury group (AIS category A) showing significantly higher. In particular, cases of complete injury had >15 % compression, accounting for 87.5 % ($P < 0.001$). The mean intramedullary lesion length was significantly higher in complete-injury patients than in incomplete-injury patients (24.22 vs. 8.24 mm). Intramedullary hemorrhage and spinal cord edema were significantly more frequently observed in complete-injury cases ($P < 0.001$). The incidence of complete injury was proportional to the severity of soft tissue damage.

CONCLUSION:

MCC, intramedullary lesion length, intramedullary hemorrhage, and spinal cord edema were MRI parameters associated with poor neurologic outcomes in patients with cervical spine extension injury.

KEYWORDS: ASIA score; Cervical spine; Extension injury; MRI

PMID: 26695064

NDI and Oswestry

Spine (Phila Pa 1976). 2016 Jan;41(1):74-81. doi: 10.1097/BRS.0000000000001159.

Developing the Total Disability Index Based on an Analysis of the Interrelationships and Limitations of Oswestry and Neck Disability Index.

Spiegel MA¹, Lafage R, Lafage V, Ryan D, Marascalchi B, Trimba Y, Ames C, Harris B, Tanzi E, Oren J, Vira S, Errico T, Schwab F, Protosaltis TS.

Author information

Abstract

STUDY DESIGN:

Retrospective.

OBJECTIVE:

This study assessed the feasibility of combining Oswestry and Neck Disability Index (ODI and NDI) into 1 shorter "Total Disability Index" (TDI) from which reconstructed scores could be computed.

SUMMARY OF BACKGROUND DATA:

ODI and NDI are not pure assessments of disability related to back and neck, respectively. Because of similarities/redundancies of questions, ODI scores may be elevated in neck-pain patients and the converse is true for NDI in back-pain patients.

METHODS:

Spine patients completed ODI and NDI, and complaints were recorded as back pain (BP), neck pain (NP), or both (BNP). Questionnaire scores were compared across cohorts via descriptives and Spearman (ρ) correlations. In exploring the feasibility of merging ODI/NDI, TDI was constructed from 9 ODI and 5 NDI items. Extracting questions from TDI, reconstructed 9-item rODI and 10-item rNDI indices were formed and compared with true ODI/NDI.

RESULTS:

There were a total of 1207 patients: 741 BP, 134 NP, and 268 BNP. Mean ODI was 37 ± 21 and mean NDI was 32 ± 21 . Patients with concurrent BP and NP had significantly more disability. Seventy-eight patients of 134 (58%) patients with NP only had at least "moderate disability" by ODI and 297 of 741 (40%) patients with back pain only, had at least "moderate disability" by NDI. ODI versus NDI correlation was $\rho=0.755$; ODI versus reconstructed rODI correlated at $\rho=0.985$, and NDI versus reconstructed rNDI correlated at $\rho=0.967$ ($P<0.01$).

CONCLUSION:

Elevated ODI/NDI scores in patients with isolated complaints show that disability in 1 region affects scores on both surveys. This study constructed a 14-item TDI that represents every domain of ODI/NDI with exception of ODI "Sex Life." From this TDI, reconstructed scores correlated near perfectly with true scores. TDI provides a more global assessment of spinal disability and is a questionnaire that reduces the time burden to patients. The TDI allows for simultaneous assessment of back, neck, and global spinal disability.

LEVEL OF EVIDENCE: 2.

PMID:26335678

Fat infiltration

Spine (Phila Pa 1976). 2016 Jan;41(1):E8-E14. doi: 10.1097/BRS.0000000000001196.

Greater Cervical Muscle Fat Infiltration Evaluated by Magnetic Resonance Imaging is Associated With Poor Postural Stability in Patients With Cervical Spondylotic Radiculopathy.

Mitsutake T¹, Sakamoto M, Chyuda Y, Oka S, Hirata H, Matsuo T, Oishi T, Horikawa E.
Author information

Abstract

STUDY DESIGN:

A population-based, cross-sectional study.

OBJECTIVE:

The aim of this study was to quantitatively evaluate the relationship between static postural stability and fat infiltration within cervical multifidus muscle in patients with cervical spondylotic radiculopathy (CSR).

SUMMARY OF BACKGROUND DATA:

CSR causes denervation by compression of nerve roots. This denervation is detected by fatty infiltration or results in fatty infiltration within muscles. Proprioceptive information in cervical multifidus muscle plays an important role in coordinated movement of postural stability; however, there have been few studies evaluating the relationship between postural stability and fat infiltration within cervical multifidus muscle among CSR patients.

METHODS:

Sixteen CSR patients with C6 injuries and 25 age-matched healthy controls underwent magnetic resonance images to examine bilateral cervical multifidus muscle. For evaluation of fat within muscle, a muscle fat index (MFI) was calculated by using both measurement of cervical multifidus muscle and intermuscular fat. Participants' postural stability at upright position with eyes-opened and eyes-closed for 60 seconds was examined by a platform. Two parameters, the total length and the area of the center of pressure (COP), were used for evaluation.

RESULTS:

The CSR group showed significantly poorer postural stability than the control group (eyes-opened the total length; $P < 0.05$, eyes-closed the total length; $P < 0.05$, eyes-closed the area; $P < 0.05$). There were significant group differences at C4, C5, and C6 MFI ($P < 0.05$). In the CSR group, a correlation analysis demonstrated that the age, C4, C5, and C6 MFI values were significantly associated with the eyes-closed the total length of the COP ($P < 0.05$).

CONCLUSIONS:

Fat infiltration within muscle could lead to inhibition of normal activity of musculature. The present study suggests that fat within cervical multifidus muscle could directly cause postural instability in static standing, even though the proprioceptive information has normal lower limbs.

LEVEL OF EVIDENCE: 3.

PMID: 26571156

11. UPPER C SPINE

RA and vertebral artery

Spine (Phila Pa 1976). 2016 Jan;41(1):26-31. doi: 10.1097/BRS.0000000000001136.

Duplex Ultrasonography-Detected Positional Vertebral Artery Occlusion in Upper Cervical Rheumatoid Arthritis.

Tateishi Y¹, Tagami A, Baba H, Osaki M, Kawakami A, Akira T.
Author information

Abstract

STUDY DESIGN:

Prospective imaging study.

OBJECTIVE:

To clarify the frequency of positional vertebral artery (VA) occlusion using duplex ultrasonography in patients with rheumatoid arthritis (RA).

SUMMARY OF BACKGROUND DATA:

Some patients with upper cervical RA develop thromboembolic stroke related to positional and transient VA occlusions; however, whether RA patients have positional VA occlusion without neurological symptoms is unclear.

METHODS:

Outpatients with RA were enrolled. Clinical data were collected, and radiograph examinations were performed to measure the anterior atlantodental interval (AADI), the posterior atlantodental interval (PADI), and the Ranawat method. Patients underwent duplex ultrasonography during rotation to the contralateral side of the examination side, flexion, and extension of their neck. If positional VA occlusion was detected, CT angiography was conducted in the neutral position and in the same position that showed VA occlusion on duplex ultrasonography. Clinical and radiological data were compared between the VA occlusion (VAO) group and the non-VAO group. Sensitivity-specificity curve analyses were performed to clarify optimal threshold values of AADI, PADI, and the Ranawat method for predicting positional VA occlusion.

RESULTS:

Of the 132 RA patients, dynamic duplex ultrasonography showed positional VA occlusion in eight (6%) patients. Patients in the VAO group had a greater AADI (median, 7.4 vs. 2.3 mm; $P < 0.001$), a shorter PADI (median, 13.7 vs. 19.6 mm; $P = 0.002$), and a lower Ranawat value (median, 13.7 vs. 16.8 mm; $P = 0.006$) than those in the non-VAO group. Cut-off values of AADI, PADI, and the Ranawat method for predicting positional VA occlusion were 6.5, 14.0, and 15.5 mm, respectively.

CONCLUSION:

A subset of RA patients developed positional VA occlusion associated with cervical spine involvement.

LEVEL OF EVIDENCE: 3.

PMID: 26583470

13. CRANIUM/TMJ

Masseter

J Oral Rehabil. 2015 Dec 27. doi: 10.1111/joor.12375.

Small vertical changes in jaw relation affect motor unit recruitment in the masseter.

Terebesi S¹, Giannakopoulos NN¹, Brüstle F¹, Hellmann D¹, Türp JC², Schindler HJ³.

Author information

Abstract

Strategies for recruitment of masseter muscle motor units (MUs), provoked by constant bite force, for different vertical jaw relations have not previously been investigated. The objective of this study was to analyse the effect of small changes in vertical jaw relation on MU recruitment behaviour in different regions of the masseter during feedback-controlled submaximum biting tasks. Twenty healthy subjects (mean age: 24.6 ± 2.4 years) were involved in the investigation. Intra-muscular electromyographic (EMG) activity of the right masseter was recorded in different regions of the muscle. MUs were identified by the use of decomposition software, and root-mean-square (RMS) values were calculated for each experimental condition. Six hundred and eleven decomposed MUs with significantly ($P < 0.001$) different jaw relation-specific recruitment behaviour were organised into localised MU task groups. MUs with different task specificity in seven examined tasks were observed. The RMS EMG values obtained from the different recording sites were also significantly ($P < 0.01$) different between tasks. Overall MU recruitment was significantly ($P < 0.05$) greater in the deep masseter than in the superficial muscle. The number of recruited MUs and the RMS EMG values decreased significantly ($P < 0.01$) with increasing jaw separation. This investigation revealed differential MU recruitment behaviour in discrete subvolumes of the masseter in response to small changes in vertical jaw relations. These fine-motor skills might be responsible for its excellent functional adaptability and might also explain the successful management of temporomandibular disorder patients by somatic intervention, in particular by the use of oral splints.

KEYWORDS: craniomandibular disorders; electromyography; masseter muscle; neurophysiological recruitment; occlusal splints; vertical dimension
PMID: 26707515

Malocclusion

Am J Orthod Dentofacial Orthop. 2016 Jan;149(1):114-26. doi: 10.1016/j.ajodo.2014.12.030.

Strategic camouflage treatment of skeletal Class III malocclusion (mandibular prognathism) using bone-borne rapid maxillary expansion and mandibular anterior subapical osteotomy.

Seo YJ¹, Lin L², Kim SH³, Chung KR⁴, Nelson G⁵.

Author information

Abstract

This case report presents the camouflage treatment that successfully improved the facial profile of a patient with a skeletal Class III malocclusion using bone-borne rapid maxillary expansion and mandibular anterior subapical osteotomy. The patient was an 18-year-old woman with chief complaints of crooked teeth and a protruded jaw. Camouflage treatment was chosen because she rejected orthognathic surgery under general anesthesia. A hybrid type of bone-borne rapid maxillary expander with palatal mini-implants was used to correct the transverse discrepancy, and a mandibular anterior subapical osteotomy was conducted to achieve proper overjet with normal incisal inclination and to improve her lip and chin profile. As a result, a Class I occlusion with a favorable inclination of the anterior teeth and a good esthetic profile was achieved with no adverse effects. Therefore, the hybrid type of bone-borne rapid maxillary expander and a mandibular anterior subapical osteotomy can be considered effective camouflage treatment of a skeletal Class III malocclusion, providing improved inclination of the dentition and lip profile.

PMID: 26718385

Sleep apnea

J Oral Rehabil. 2015 Dec 27. doi: 10.1111/joor.12376.

Oral appliance treatment in moderate and severe obstructive sleep apnoea patients non-adherent to CPAP.

Gjerde K¹, Lehmann S^{1,2}, Berge ME^{1,3}, Johansson AK⁴, Johansson A^{1,3}.

Author information

Abstract

The aim of this retrospective study was to evaluate the effect of individually adjusted custom-made mandibular advancement device/oral appliance (OA) in treatment of patients with moderate and severe obstructive sleep apnoea (OSA), who were non-adherent to continuous positive airway pressure (CPAP) therapy. During 2007-2013, 116 patients with moderate (n = 82) and severe (n = 34) OSA non-adherent to CPAP treatment were referred for dental management with an individually adjusted OA at a specialist sleep clinic. Ten of the participants (8.6%) were lost to follow-up, leaving the data set to consist of 106 patients (71 men/35 women, mean age 57 year, range 28-90). Nocturnal respiratory polygraphic recordings were performed at baseline and follow-up. Average time between baseline polygraphy and follow-up was 12 months. A successful OA treatment outcome was based on polygraphy at the follow-up and divided into three groups: 1 = AHI <5; 2 = 5 ≤ AHI <10 and >50% reduction in baseline AHI; and 3. >50% reduction in baseline AHI. If there was a ≤ 50% reduction in baseline AHI at the follow-up, the treatment was considered as a failure. The overall treatment success rate was 75%. There was no significant difference in success rates between patients in the moderate and severe categories (69% and 77%, respectively). Low oxygen saturation (SpO_{2 nadir}) had a high predictive value for OA treatment failure. OA treatment of patients non-adherent to CPAP is efficient and especially promising for the severe OSA group who are at greatest risks for developing serious comorbidities, if left untreated.

KEYWORDS: continuous positive airway pressure; mandibular advancement; medical device; obstructive sleep apnoea; oximetry; somnography

PMID: 26707632

Dental Caries

Community Dent Oral Epidemiol. 2016 Jan 10. doi: 10.1111/cdoe.12211.

Adverse birth outcomes and childhood caries: a cohort study.

Nirunsittirat A¹, Pitiphat W^{2,3}, McKinney CM⁴, DeRouen TA⁴, Chansamak N², Angwaravong O⁵, Patcharanuchat P², Pimpak T⁶.

Author information

Abstract

OBJECTIVES:

To examine the association between adverse birth outcomes and dental caries in primary teeth.

METHODS:

This study included children in Khon Kaen, Thailand, who participated in the Prospective Cohort Study of Thai Children. Preterm was defined as a birth at <37 weeks gestation, low birthweight (LBW) as birthweight <2500 g, and small-for-gestational age (SGA) as birthweight <10th percentile of expected weight for gestational age. Two calibrated dentists measured dental caries in primary teeth when the children were 3-4 years old using decayed, missing and filled surfaces (dmfs) index following the World Health Organization criteria. We used negative binomial regression with generalized linear models to estimate relative risks (RRs) and their 95% confidence intervals (CIs), adjusted for confounding factors. Of 758 children with gestational age data and 833 with birthweight data, the 544 (follow-up rate of 71.8% in preterm and 65.3% in LBW) who had dental data available were included in the analysis.

RESULTS:

Dental caries was observed in 480 children (88.2%), with a mean dmfs of 14.3 (standard deviation 12.8). The adjusted RR for dental caries was 0.61 (95% CI 0.43, 0.85) for preterm, 0.89 (95% CI 0.67, 1.21) for LBW, and 0.96 (95% CI 0.74, 1.26) for SGA.

CONCLUSIONS:

There was an inverse association between preterm and childhood caries. LBW and SGA were not associated with dental caries in this population.

KEYWORDS: children; dental caries; low birthweight; preterm; primary teeth; small-for-gestational age

PMID: 26750102

TMJ and work

J Oral Rehabil. 2016 Jan 6. doi: 10.1111/joor.12377.

Associations among temporomandibular disorders, chronic neck pain and neck pain disability in computer office workers: a pilot study.

Bragatto MM¹, Bevilaqua-Grossi D², Regalo SC³, Sousa JD⁴, Chaves TC⁵.

Author information

Abstract

Neck pain is the most common musculoskeletal complaint among computer office workers. There are several reports about the coexistence of neck pain and temporomandibular disorders (TMD). However, there are no studies investigating this association in the context of work involving computers. The purpose of this study was to verify the association between TMD and neck pain in computer office workers. Fifty-two female computer workers who were divided into two groups: (i) those with self-reported chronic neck pain and disability (WNP) (n = 26) and (ii) those without self-reported neck pain (WONP) (n = 26), and a control group (CG) consisting of 26 women who did not work with computers participated in this study. Clinical assessments were performed to establish a diagnosis of TMD, and craniocervical mechanical pain was assessed using manual palpation and pressure pain threshold (PPT). The results of this study showed that the WNP group had a higher percentage of participants with TMD than the WONP group (42.30% vs. 23.07%, $\chi^2 = 5.70$, $P = 0.02$). PPTs in all cervical sites were significantly lower in the groups WNP and WONP compared to the CG. Regression analysis revealed TMD, neck pain and work-related factors to be good predictors of disability ($R^2 = 0.93$, $P < 0.001$). These results highlighted the importance of considering the work conditions of patients with TMD, as neck disability in computer workers is explained by the association among neck pain, TMD and unfavourable workplace conditions. Consequently, this study attempted to emphasise the importance of considering work activity for minimising neck pain-related disability.

KEYWORDS: chronic neck pain; computer office workers; neck pain-related disability; temporomandibular disorders

PMID: 26732204

Pain after root canal

Pain. 2016 Jan;157(1):159-65. doi: 10.1097/j.pain.0000000000000343.

Frequency, impact, and predictors of persistent pain after root canal treatment: a national dental PBRN study.

Nixdorf DR¹, Law AS, Lindquist K, Reams GJ, Cole E, Kanter K, Nguyen RH, Harris DR; National Dental PBRN Collaborative Group.

[Author information](#)

Abstract

Root canal treatment (RCT) is commonly performed surgery and persistent pain is known to occur, but little is known about how these patients are affected by this pain. Although biopsychosocial mechanisms are thought to be associated with the development of such pain, similar to persistent pain after surgery in other body sites, little is known about the baseline predictors for persistent pain. We assessed the frequency of persistent pain 6 months after RCT, measured the impact this pain had on patients, and determined predictive factors for persistent tooth pain in a multicenter prospective cohort study conducted within the National Dental Practice-Based Research Network. Of 708 patients enrolled, 651 (91.9%) provided follow-up data, with 65 (10.0%) meeting criteria for pain 6 months after RCT. On average, these patients reported their pain as mild to moderate in intensity, present for approximately 10 days in the preceding month, and minimally interfered with daily activities. After adjusting for the type of dental practitioner and patient age, gender, and household income, pain duration over the week before RCT significantly increased the risk of developing persistent pain (odds ratio = 1.19 per 1 day increase in pain duration, 95% confidence interval: 1.07-1.33), whereas optimism about the procedure reduced the risk (odds ratio = 0.39, 95% confidence interval: 0.22-0.67). Our data suggest that persistent pain 6 months after RCT is fairly common, but generally does not have a large impact on those experiencing it. Furthermore, patient age and gender did not predict persistent pain, whereas preoperative pain duration and the patient's expectation did.

PMID:26335907

Fascial symmetry

Int J Oral Maxillofac Surg. 2015 Dec 18. pii: S0901-5027(15)01426-5. doi: 10.1016/j.ijom.2015.11.013.

The primal sagittal plane of the head: a new concept.

Gateno J¹, Jajoo A², Nicol M², Xia JJ³.
Author information

Abstract

To assess facial form, one has to determine the size, position, orientation, shape, and symmetry of the different facial units. Many of these assessments require a frame of reference. The customary coordinate system used for these assessments is the 'standard anatomical frame of reference', a three-dimensional Cartesian system made by three planes: the sagittal, the axial, and the coronal. Constructing the sagittal plane seems simple, but because of universal facial asymmetry, it is complicated. Depending on the method one selects, one can build hundreds of different planes, never knowing which one is correct. This conundrum can be solved by estimating the sagittal plane a patient would have had if his or her face had developed symmetrically.

We call this the 'primal sagittal plane'. To estimate this plane we have developed a mathematical algorithm called LAGER (Landmark Geometric Routine). In this paper, we explain the concept of the primal sagittal plane and present the structure of the LAGER algorithm.

KEYWORDS: anatomical; craniomaxillofacial; deformity quantification; dentofacial; geometry; head; midsagittal plane; orthognathic; primal frame of reference; primal sagittal plane; three-dimensional

PMID: 26708049

Condylar ankylosis begins with cartilage**Injured condylar cartilage leads to traumatic temporomandibular joint ankylosis**

Jiewen Dai Ningjuan Ouyang Xiaofang Zhu Li Huang Guofang Shen

Summary**Purpose**

The exact mechanisms of traumatic temporomandibular joint ankylosis (TTMJA) are largely unknown. In this study, we explore the role of injured condylar cartilage in the development of TTMJA.

Material and Methods

One-month-old male mice were divided into two groups. In group 1, condylar cartilage was partially removed in the right joint using a small scissors to induce ankylosis. In group 2, condylar cartilage was completely removed in the same right joint using a small scissors to induce ankylosis. The phenotypes were observed using gross observation, micro-computed tomography scans and histological examination.

Results

The results revealed a great deal of ectopic cartilage and bone formation in the right periarticular region in all mice in group 1, whereas there was only a small amount of ectopic cartilage present in 26.7% of the mice in group 2. Additionally, there was stronger expression of FGF9 and weaker expression of OPN in the right temporomandibular joint region in group 2 at 7 days after surgery.

Conclusions

These results suggest that the injured cartilage, not the injured bone, plays a crucial role in the development of TTMJA. In addition, it offers a useful TTMJA animal model to study the molecular mechanisms of TTMJA based on the gene manipulation technology, such as gene knock-out and knock-in as well as transgenic or gene mutation.

Keywords:

condylar cartilage, traumatic, temporomandibular joint ankylosis

Masseter function changes with jaw

J Oral Rehabil. 2015 Dec 27. doi: 10.1111/joor.12375.

Small vertical changes in jaw relation affect motor unit recruitment in the masseter.

Terebesi S¹, Giannakopoulos NN¹, Brüstle F¹, Hellmann D¹, Türp JC², Schindler HJ³.
Author information

Abstract

Strategies for recruitment of masseter muscle motor units (MUs), provoked by constant bite force, for different vertical jaw relations have not previously been investigated. The objective of this study was to analyse the effect of small changes in vertical jaw relation on MU recruitment behaviour in different regions of the masseter during feedback-controlled submaximum biting tasks. Twenty healthy subjects (mean age: 24.6 ± 2.4 years) were involved in the investigation. Intra-muscular electromyographic (EMG) activity of the right masseter was recorded in different regions of the muscle. MUs were identified by the use of decomposition software, and root-mean-square (RMS) values were calculated for each experimental condition. Six hundred and eleven decomposed MUs with significantly ($P < 0.001$) different jaw relation-specific recruitment behaviour were organised into localised MU task groups. MUs with different task specificity in seven examined tasks were observed. The RMS EMG values obtained from the different recording sites were also significantly ($P < 0.01$) different between tasks. Overall MU recruitment was significantly ($P < 0.05$) greater in the deep masseter than in the superficial muscle. The number of recruited MUs and the RMS EMG values decreased significantly ($P < 0.01$) with increasing jaw separation. This investigation revealed differential MU recruitment behaviour in discrete subvolumes of the masseter in response to small changes in vertical jaw relations. These fine-motor skills might be responsible for its excellent functional adaptability and might also explain the successful management of temporomandibular disorder patients by somatic intervention, in particular by the use of oral splints.

KEYWORDS: craniomandibular disorders; electromyography; masseter muscle; neurophysiological recruitment; occlusal splints; vertical dimension
PMID: 26707515

Disc

Am J Orthod Dentofacial Orthop. 2016 Jan;149(1):39-45. doi: 10.1016/j.ajodo.2015.06.021.

Directional characteristics of incipient temporomandibular joint disc displacements: A magnetic resonance imaging study.

Ikeda R¹, Ikeda K².
Author information

Abstract

INTRODUCTION:

Disc displacement (DD) is common in adolescents, but not much is understood about its cause. Assessment of the directionality of incipient DDs may provide clues about the etiology.

METHODS:

The sample consisted of magnetic resonance images of 143 temporomandibular joints with incipient DD from 89 preorthodontic patients (mean age, 10.8 years). The severity of DD was evaluated by grading the degree of displacement depicted in the images in the sagittal and coronal planes, and each incipient DD was categorized based on the directionality.

RESULTS:

Of the 143 incipient DDs, rotational anterolateral DD (43.36%) and partial anterior DD in the lateral portion (27.27%) were the most common; rotational anteromedial DD (9.09%) and partial anterior DD in the medial portion (1.40%) accounted for only 10.49%. Anterior DD was seen in 12.59%. Pure sideways shift was rare; lateral DD was seen in 2.80%, and medial DD in 3.50%. Thus, the lateral part of the joint was involved in a majority of the incipient DDs and the medial part far less. No sex difference was noted in this trend, but the difference between the right and left sides was statistically significant.

CONCLUSIONS:

These results indicate a predilection for the lateral part of the joint in incipient DDs and may have etiologic implications.

PMID: 26718376

Tongue pressure

Am J Orthod Dentofacial Orthop. 2016 Jan;149(1):55-61. doi: 10.1016/j.ajodo.2015.06.023.

Effect of an intraoral appliance on tongue pressure measured by force exerted during swallowing.

Xu K¹, Zeng J¹, Xu T².

Author information

Abstract

INTRODUCTION:

The goal of this study was to modify the transpalatal arch design that is used for vertical control of the molars, based on individual muscle strength and morphology features of the tongue during swallowing.

METHODS:

Individual Silastic (Müller-Omicron, Cologne, Germany) swallowing tongue records were created and measured for 32 healthy volunteers. The transpalatal arches were modified by adding acrylic pads, based on the swallowing tongue records. Tongue pressure exerted on the hard palate and the acrylic pads at 3 distances to the palatal mucosa during swallowing was measured by pressure sensors for 18 subjects.

RESULTS:

The intraclass correlation coefficient of the thickness of swallowing tongue records taken by 2 researchers was 0.977, indicating good consistency between these researchers. A significant negative correlation was found between the thickness of the swallowing tongue records and individual tongue pressure ($r = -0.511$; $P < 0.01$). Tongue pressure exerted on the fabricated pads consistent with swallowing tongue records was significantly higher than on the hard palate, yet not significantly higher than tongue pressure exerted on the pads positioned 3 mm closer to the palatal mucosa. In contrast, increasing the distance of the pad 3 mm away from the mucosa led to significant augmentation of tongue pressure.

CONCLUSIONS:

Creating patient swallowing tongue records is a repeatable and reliable method to reflect individual differences in morphologic features and muscle strengths of the tongue. Decreasing the distance of the pads to the mucosa is preferable if a high force to intrude molars will not be used. On the premise of a patient's tolerance, increasing the distance of the pads away from the mucosa

PMID: 26718378

Trigeminal nerve**Microstructural abnormalities of the trigeminal nerve correlate with pain severity and concomitant emotional dysfunctions in idiopathic trigeminal neuralgia: A randomized, prospective, double-blind study**

Wang Yuan Li Dan Bao Faxiu Guo Chenguang Ma Shaohui Zhang Ming

Abstract**Objective**

To compare cross-sectional area (CSA) and volume (V) between the trigeminal nerves (TGNs) of the affected side and the unaffected side in patients with idiopathic trigeminal neuralgia (ITN), and both nerves in normal controls, and to correlate these morphological data with degree of facial pain and emotional disorder severity in ITN patients.

Methods

Forty ITN patients and 40 matched healthy volunteers underwent three-dimensional fast imaging employing steady state acquisition (3D-FIESTA) and time-of-flight magnetic resonance angiography (TOF-MRA) focusing on CSA and V of the TGN cisternal segment. Correlations between the morphological results and scores of visual analogue scale (VAS), Hamilton depression rating scale (HAMD), and Hamilton anxiety rating scale (HAMA) were analyzed in two groups.

Results

CSA and V of the affected TGN were significantly smaller than in the unaffected TGN and both sides in controls. No statistical differences were observed between morphological data of the unaffected TGN and control TGNs. CSA and V of the affected TGN were significantly associated with VAS scores in ITN patients, and intermediate correlations were detected with HAMD and HAMA scores.

Conclusion

Degree of atrophy in the affected TGN can be effective for evaluating facial pain and assessing emotional deficits in ITN patients.

Keywords:

Idiopathic trigeminal neuralgia (ITN), Cross-sectional area (CSA), Volume (V), Visual analogue scale (VAS), Hamilton depression rating scale (HAMD), Hamilton anxiety rating scale (HAMA)

TMJ

Am J Orthod Dentofacial Orthop. 2016 Jan;149(1):39-45. doi: 10.1016/j.ajodo.2015.06.021.

Directional characteristics of incipient temporomandibular joint disc displacements: A magnetic resonance imaging study.

Ikeda R¹, Ikeda K².

Author information

Abstract

INTRODUCTION:

Disc displacement (DD) is common in adolescents, but not much is understood about its cause. Assessment of the directionality of incipient DDs may provide clues about the etiology.

METHODS:

The sample consisted of magnetic resonance images of 143 temporomandibular joints with incipient DD from 89 preorthodontic patients (mean age, 10.8 years). The severity of DD was evaluated by grading the degree of displacement depicted in the images in the sagittal and coronal planes, and each incipient DD was categorized based on the directionality.

RESULTS:

Of the 143 incipient DDs, rotational anterolateral DD (43.36%) and partial anterior DD in the lateral portion (27.27%) were the most common; rotational anteromedial DD (9.09%) and partial anterior DD in the medial portion (1.40%) accounted for only 10.49%. Anterior DD was seen in 12.59%. Pure sideways shift was rare; lateral DD was seen in 2.80%, and medial DD in 3.50%. Thus, the lateral part of the joint was involved in a majority of the incipient DDs and the medial part far less. No sex difference was noted in this trend, but the difference between the right and left sides was statistically significant.

CONCLUSIONS:

These results indicate a predilection for the lateral part of the joint in incipient DDs and may have etiologic implications.

PMID:26718376

14. HEADACHES

Medical MJ

Pharmacotherapy. 2016 Jan 9. doi: 10.1002/phar.1673.

Effects of Medical Marijuana on Migraine Headache Frequency in an Adult Population.

Rhyne DN¹, Anderson SL¹, Gedde M², Borgelt LM^{1,3}.

Author information

Abstract

STUDY OBJECTIVE: No clinical trials are currently available that demonstrate the effects of marijuana on patients with migraine headache; however, the potential effects of cannabinoids on serotonin in the central nervous system indicate that marijuana may be a therapeutic alternative. Thus, the objective of this study was to describe the effects of medical marijuana on the monthly frequency of migraine headache.

DESIGN: Retrospective chart review.

SETTING: Two medical marijuana specialty clinics in Colorado.

PATIENTS: One hundred twenty-one adults with the primary diagnosis of migraine headache who were recommended migraine treatment or prophylaxis with medical marijuana by a physician, between January 2010 and September 2014, and had at least one follow-up visit.

MEASUREMENTS AND RESULTS: The primary outcome was number of migraine headaches per month with medical marijuana use. Secondary outcomes were the type and dose of medical marijuana used, previous and adjunctive migraine therapies, and patient-reported effects.

Migraine headache frequency decreased from 10.4 to 4.6 headaches per month ($p < 0.0001$) with the use of medical marijuana. Most patients used more than one form of marijuana and used it daily for prevention of migraine headache. Positive effects were reported in 48 patients (39.7%), with the most common effects reported being prevention of migraine headache with decreased frequency of migraine headache (24 patients [19.8%]) and aborted migraine headache (14 patients [11.6%]). Inhaled forms of marijuana were commonly used for acute migraine treatment and were reported to abort migraine headache. Negative effects were reported in 14 patients (11.6%); the most common effects were somnolence (2 patients [1.7%]) and difficulty controlling the effects of marijuana related to timing and intensity of the dose (2 patients [1.7%]), which were experienced only in patients using edible marijuana. Edible marijuana was also reported to cause more negative effects compared with other forms.

CONCLUSION: The frequency of migraine headache was decreased with medical marijuana use. Prospective studies should be conducted to explore a cause-and-effect relationship and the use of different strains, formulations, and doses of marijuana to better understand the effects of medical marijuana on migraine headache treatment and prophylaxis.

KEYWORDS: cannabis; headache; marijuana; migraine

PMID: 26749285

Pain interference

Cephalalgia. 2016 Jan 6. pii: 0333102415625613.

Ecological momentary assessment of the relationship between headache pain intensity and pain interference in women with migraine and obesity.

Thomas JG¹, Pavlovic J², Lipton RB², Roth J³, Rathier L¹, O'Leary KC¹, Buse DC², Evans EW¹, Bond DS⁴.

Author information

Abstract

BACKGROUND:

While pain intensity during migraine headache attacks is known to be a determinant of interference with daily activities, no study has evaluated: (a) the pain intensity-interference association in real-time on a per-headache basis, (b) multiple interference domains, and (c) factors that modify the association.

METHODS:

Participants were 116 women with overweight/obesity and migraine seeking behavioral treatment to lose weight and decrease headaches in the Women's Health and Migraine trial. Ecological momentary assessment, via smartphone-based 28-day headache diary, and linear mixed-effects models were used to study associations between pain intensity and total- and domain-specific interference scores using the Brief Pain Inventory. Multiple factors (e.g. pain catastrophizing (PC) and headache management self-efficacy (HMSE)) were evaluated either as independent predictors or moderators of the pain intensity-interference relationship.

RESULTS:

Pain intensity predicted degree of pain interference across all domains either as a main effect (coeff = 0.61-0.78, $p < 0.001$) or interaction with PC, allodynia, and HMSE ($p < 0.05$). Older age and greater allodynia consistently predicted higher interference, regardless of pain intensity (coeff = 0.04-0.19, $p < 0.05$).

CONCLUSIONS:

Pain intensity is a consistent predictor of pain interference on migraine headache days. Allodynia, PC, and HMSE moderated the pain intensity-interference relationship, and may be promising targets for interventions to reduce pain interference.

KEYWORDS: Migraine; ecological momentary assessment; obesity; pain intensity; pain interference

PMID:26742779

Oxidative stress

Headache. 2015 Dec 7. doi: 10.1111/head.12725.

Migraine Triggers and Oxidative Stress: A Narrative Review and Synthesis.

Borkum JM^{1,2}.

Author information

Abstract

BACKGROUND:

Blau theorized that migraine triggers are exposures that in higher amounts would damage the brain. The recent discovery that the TRPA1 ion channel transduces oxidative stress and triggers neurogenic inflammation suggests that oxidative stress may be the common denominator underlying migraine triggers.

OBJECTIVE:

The aim of this review is to present and discuss the available literature on the capacity of common migraine triggers to generate oxidative stress in the brain.

METHODS:

A Medline search was conducted crossing the terms "oxidative stress" and "brain" with "alcohol," "dehydration," "water deprivation," "monosodium glutamate," "aspartame," "tyramine," "phenylethylamine," "dietary nitrates," "nitrosamines," "noise," "weather," "air pollutants," "hypoglycemia," "hypoxia," "infection," "estrogen," "circadian," "sleep deprivation," "information processing," "psychosocial stress," or "nitroglycerin and tolerance." "Flavonoids" was crossed with "prooxidant." The reference lists of the resulting articles were examined for further relevant studies. The focus was on empirical studies, in vitro and of animals, of individual triggers, indicating whether and/or by what mechanism they can generate oxidative stress.

RESULTS:

In all cases except pericranial pain, common migraine triggers are capable of generating oxidative stress. Depending on the trigger, mechanisms include a high rate of energy production by the mitochondria, toxicity or altered membrane properties of the mitochondria, calcium overload and excitotoxicity, neuroinflammation and activation of microglia, and activation of neuronal nicotinamide adenine dinucleotide phosphate (NADPH) oxidase. For some triggers, oxidants also arise as a byproduct of monoamine oxidase or cytochrome P450 processing, or from uncoupling of nitric oxide synthase.

CONCLUSIONS:

Oxidative stress is a plausible unifying principle behind the types of migraine triggers encountered in clinical practice. The possible implications for prevention and for understanding the nature of the migraine attack are discussed.

KEYWORDS: TRPA1; antioxidants; migraine; oxidative stress; triggers

PMID: 26639834

19. GLENOHUMERAL/SHOULDER**Shoulder Pain**

J Shoulder Elbow Surg. 2015 Dec 17. pii: S1058-2746(15)00543-1. doi: 10.1016/j.jse.2015.09.023.

Utility of features of the patient's history in the diagnosis of atraumatic shoulder pain: a systematic review.

Raynor MB¹, Kuhn JE².
Author information

Abstract

BACKGROUND:

Whereas physical examination tests for shoulder disorders have numeric values that describe the utility of the test and its effect on the probability of having a diagnosis, this information is lacking for elements of the history. The purpose of this study was to conduct a systematic review of the literature to determine numeric data (sensitivity, specificity, predictive values, and likelihood or odds ratios) for elements of the history with regard to diagnoses in patients with chronic atraumatic shoulder pain.

METHODS:

We performed a systematic review to extract information from the existing literature regarding the numeric utility of different features of the patient history as they pertain to chronic atraumatic shoulder pain. Data sources were MEDLINE through PubMed (1946-January 2012) and EMBASE through Ovid (1980-January 2012).

RESULTS:

Twenty-one studies met inclusion criteria. A diagnosis of rotator cuff tear was more likely with a history of hypercholesterolemia, having a relative with rotator cuff disease, excessive lifting, above-shoulder work, hand-held vibration work, or age older than 60 years. Acromioclavicular arthritis was more likely in weightlifters. Glenohumeral arthritis was more likely if the patient has a history of prior dislocation, age >75 years, or a diagnosis of knee osteoarthritis. Adhesive capsulitis was more likely with a history of diabetes or thyroid disorder. Posterior labral tear was more likely in football players.

CONCLUSIONS:

The numeric values for the utility of these history features will help establish numeric probabilities for diagnoses in patients with shoulder pain.

KEYWORDS: Shoulder pain; diagnosis; history; likelihood ratios; predictive values; probability; sensitivity; specificity

PMID: 26711472

20 A. ROTATOR CUFF**PRP not proven**

Arthroscopy. 2015 Dec 22. pii: S0749-8063(15)00834-8. doi: 10.1016/j.arthro.2015.10.007.

Does the Use of Platelet-Rich Plasma at the Time of Surgery Improve Clinical Outcomes in Arthroscopic Rotator Cuff Repair When Compared With Control Cohorts? A Systematic Review of Meta-analyses.

Saltzman BM¹, Jain A², Campbell KA², Mascarenhas R³, Romeo AA², Verma NN², Cole BJ².
Author information

Abstract**PURPOSE:**

The aims of the study were as follows: (1) to perform a systematic review of meta-analyses evaluating platelet-rich plasma (PRP) use at the time of arthroscopic rotator cuff repair surgery and to determine its effect on retear rates and clinical outcomes; (2) to provide a framework for the analysis and interpretation of the best currently available evidence; and (3) to identify gaps within the literature where suggestions for continued investigational efforts would be valid.

METHODS:

Literature searches were performed to identify meta-analyses examining arthroscopic rotator cuff repairs augmented with PRP versus control (no PRP). Clinical data were extracted and meta-analysis quality was assessed using the Quality of Reporting of Meta-analyses and Oxman-Guyatt scales.

RESULTS:

Seven meta-analyses met inclusion and exclusion criteria. All were considered as being of similar quality with Quality of Reporting of Meta-analyses scores >15 and Oxman scores of 7. A total of 3,193 overlapping patients treated were included with mean follow-up from 12 to 31 months. When compared with control patients, use of PRP at the time of rotator cuff repair did not result in significantly lower overall retear rates or improved clinical outcome scores. The following postoperative functional scores comparing PRP versus control were reported: Constant (no significant difference demonstrated with PRP use in 5 of 6 reporting meta-analyses), University of California - Los Angeles (no difference, 6 of 6), American Shoulder and Elbow Society (no difference, 4 of 4), and Simple Shoulder Test (no difference, 3 of 5). Subgroup analysis performed by 3 meta-analyses showed evidence of improved outcomes with solid PRP matrix versus liquid, small- and/or medium-sized versus large and/or massive tears, PRP application at the tendon-bone interface versus over tendon, and in the setting of double-row versus single-row rotator cuff.

CONCLUSIONS:

The current highest level of evidence suggests that PRP use at the time of arthroscopic rotator cuff repair does not universally improve retear rates or affect clinical outcome scores. However, the effects of PRP use on retear rates trend toward beneficial outcomes if evaluated in the context of the following specific variables: use of a solid PRP matrix; application of PRP at the tendon-bone interface; in double-row repairs; and with small- and/or medium-sized rotator cuff tears.

LEVEL OF EVIDENCE:

Level III, systematic review of Level II and III studies.

PMID: 26725454

22 A. IMPINGEMENT**Tapping and NSAID's**

Clin J Sport Med. 2016 Jan;26(1):24-32. doi: 10.1097/JSM.0000000000000187.

Short-Term Effectiveness of Precut Kinesiology Tape Versus an NSAID as Adjuvant Treatment to Exercise for Subacromial Impingement: A Randomized Controlled Trial.

Devereaux M¹, Velanoski KQ, Pennings A, Elmaraghy A.
Author information

Abstract

OBJECTIVE:

To compare the short-term effectiveness of precut kinesiology tape (PCT) to a nonsteroidal anti-inflammatory drug (NSAID) as adjuvant treatment to exercise physiotherapy in improving pain and function in patients with shoulder impingement.

DESIGN:

Randomized, controlled assessor-blind parallel-design trial with 3 groups.

SETTING:

Academic-community hospital.

PATIENTS:

One hundred patients (mean age: 48 ± 12.3, 61 men, 39 women) with a diagnosis of subacromial impingement (SAI) syndrome were randomized to a treatment group from October 2009 to June 2012. Eighty-one patients completed the study.

INTERVENTIONS:

Patients were randomized to one of the 3 treatment groups: PCT and Exercise (n = 33), NSAID and Exercise (n = 29), or Exercise only (n = 38) for a 4 session 2-week intervention with a registered physiotherapist.

MAIN OUTCOME MEASURES:

Numeric pain rating scales for pain at rest and pain with arm elevation, the Simple Shoulder Test (SST), and the Constant Score were assessed pretreatment and post-treatment.

RESULTS:

A statistically significant reduction in pain at rest and pain with arm elevation, as well as improvement in SST and Constant Score were observed in all 3 treatment groups, with minimal clinically important differences shown on pain with elevation and SST scores. Between-group differences on all outcome measures were not statistically significant or clinically meaningful.

CONCLUSIONS:

The improvements in pain and function observed with an NSAID or PCT as adjuvant treatments were no greater than with rehabilitation exercise alone. If adjuvant treatment is desired, PCT seems to be better tolerated than an NSAID, although the difference did not reach significance.

CLINICAL RELEVANCE:

The routine addition of adjuvant treatment is not supported by the results of this study. As adjuvant therapy, PCT seems to be better tolerated than an NSAID. If desired, clinicians may consider incorporating PCT along with an exercise component in the conservative treatment of SAI syndrome.

PMID: 25915145

26. CARPAL TUNNEL SYNDROME

Ultrasound assessment

Eur J Orthop Surg Traumatol. 2015 Dec 24.

Ultrasonographic diagnosis of carpal tunnel syndrome: introducing a new approach.

Kolovos S¹, Tsiotas D².
Author information

Abstract

INTRODUCTION:

CTS, the most common nerve entrapment syndrome of the upper limb, is being diagnosed by clinical criteria, in most cases supported by the electrodiagnosis method, which appears limits regarding its sensitivity and specificity and suggests an intervening and expensive technique. The purpose of this study was to contribute to establishing U/S examination as a method with at least of the same accuracy with electrodiagnosis.

MATERIAL AND METHOD:

A sample of 60 healthy individuals and 30 patients suffering from CTS was scanned. The diagnosis was conducted by both clinical and electrodiagnostic criteria, or by clinical criteria supported by postsurgical outcome.

METHOD:

In order to improve the accuracy of measurements, the anteroposterior to transverse diameter of the median nerve inside the canal and in its entrance was scanned and compared, by sonography. The examination conducted three times for each dimension, and the mean value per individual was calculated.

RESULTS:

The mean ratios for the 60 healthy wrists was found to range within the interval 0.49-0.88 (presenting a mean value of 0.66), and the corresponding for the 30 suffering from CTS wrists was within the interval 1.12-1.59 (with a mean value of 1.39).

CONCLUSION:

The statistical analysis of the examination results clearly demonstrates that the interval of ratios over the value 1.07 can be considered completely safe to diagnose that someone is suffering from CTS. In correspondence, a U/S measurement of ratios in the area up to 0.79 is completely safe to opine that this wrist refers to a healthy individual. The intermediate range of ratios 0.79-1.0 suggests a grey zone, which, by the rational of this study, does not include discrete CTS or healthy cases. This "gap" may describe subclinical or mild cases of CTS which were not been taken under consideration and for which there is no rational to interfere surgically. In the everyday's practice clinical point of view, the grey zone cases are considered healthy.

KEYWORDS: CTS; Carpal tunnel syndrome; Nerve compression; Ultrasonography
PMID: 26703987

30 A. IMPINGEMENT**Surgery for**

Arthroscopy. 2015 Dec 22. pii: S0749-8063(15)00832-4. doi: 10.1016/j.arthro.2015.10.005.

Hip Arthroscopy for Femoral-Acetabular Impingement: Do Active Claims Affect Outcomes?

Gigi R¹, Rath E¹, Sharfman ZT¹, Shimonovich S¹, Ronen I¹, Amar E².
Author information

Abstract

PURPOSE:

To compare outcomes of 3 patient groups undergoing hip arthroscopy.

METHODS:

This study included 138 consecutive hip arthroscopies (106 analyzed) for femoral-acetabular impingement (FAI) with or without labral tear in patients with a minimum 1-year follow-up. Inclusion criteria included patients older than 18 with clinical or radiologic manifestation of FAI with or without labral tear. Exclusion criteria included previous hip surgery and various hip pathologies. Patients were classified into 3 study groups. Group 1 included work-related injuries with active claims ACs (n = 33); mean age, 32 (range, 19 to 63); group 2 included sports injuries with no ACs (n = 35); mean age, 32 (range, 18 to 69); and group 3 included non-sports-related injuries without pending ACs (NAS; n = 38); mean age, 45 (range, 20 to 68). Outcomes were assessed using modified Harris hip scores (mHHS) and hip outcome scores (HOS) preoperatively and during the final evaluation.

RESULTS:

Baseline score for all groups did not significantly differ (P = .210 for mHHS, P = .176 for HOS). All groups significantly improved from preoperative to final evaluation (group 1: mHHS P = .42, HOS P = .001; group 2: mHHS P < .001, HOS P < .001; group 3 NAS: mHHS P = .001, HOS P = .007). AC patients had the lowest final evaluation scores, while the sports group had the highest. The NAS group did not differ from either group at final evaluation. Preoperative and final evaluation scores inversely correlated with age (r range, -24 to -28; P < .05).

CONCLUSIONS:

This study has shown that patients may benefit from arthroscopic repair of FAI and labral tears regardless of ACs. The level of improvement, however, is not constant across patients with different characteristics. Moreover, it appears that age may impact perceived improvement after hip arthroscopy. Hip arthroscopy as an intervention in patients with ACs provided positive outcomes, corroborating that an AC is not a contraindication for this procedure.

LEVEL OF EVIDENCE:

Level III, retrospective comparative study.

PMID:26725453

Overview

J Can Chiropr Assoc. 2010 Sep; 54(3): 164–176. PMID: PMC2921782

Femoroacetabular impingement syndrome: a narrative review for the chiropractor

Peter Emary, BSc, DC*

Abstract

Objective: To familiarize the chiropractic clinician with the clinical presentation, radiographic features, and conservative versus surgical treatment options for managing femoroacetabular impingement (FAI) syndrome.

Background: FAI syndrome is a relatively new clinical entity to be described in orthopedics, and has been strongly linked with pain and early osteoarthritis of the hip in young adults. Hip joint radiographs in these patients often appear normal at first—particularly if the clinician is unfamiliar with FAI. The role of conservative therapy in managing this disorder is questionable. Surgical treatment ultimately addresses any acetabular labral or articular cartilage damage, as well as the underlying osseous abnormalities associated with FAI. The most commonly used approach is open surgical hip dislocation; however, more recent surgical procedures also involve arthroscopy.

Conclusion: In FAI syndrome—a condition unknown to many clinicians (including medical)—chiropractors can play an important role in its diagnosis and referral for appropriate management.

Keywords: acetabulum/abnormalities, femoral neck/abnormalities, osteoarthritis, hip joint

31. KNEE**Anterolateral lig**

Arthroscopy. 2015 Dec 22. pii: S0749-8063(15)00833-6. doi: 10.1016/j.arthro.2015.10.006.

Femoral Origin of the Anterolateral Ligament: An Anatomic Analysis.

Daggett M¹, Ockuly AC², Cullen M², Busch K², Lutz C³, Imbert P⁴, Sonnery-Cottet B⁵.

[Author information](#)

Abstract**PURPOSE:**

To determine the location and variability of the anterolateral ligament (ALL) femoral origin.

METHODS:

The ALL was dissected and examined in 52 embalmed specimens, and the femoral origin was isolated. The presence of a bony or soft-tissue attachment, the relation to the lateral collateral ligament, the average diameter of the proximal origin, and the specific location of the origin relative to the lateral femoral epicondyle were recorded.

RESULTS:

The ALL was present in all 52 specimens, with a mean diameter of 11.85 mm, and was consistently attached to bone in all specimens. The ALL consistently overlapped the lateral collateral ligament near its attachment, with the location of the origin directly on the lateral epicondyle in 12 specimens (23%), with a shared lateral femoral condyle and with the origin slightly posterior and proximal to the lateral epicondyle in 30 specimens (58%), and with the origin completely posterior and proximal to the lateral epicondyle in 10 specimens (19%).

CONCLUSIONS:

The ALL showed a consistent bony origin overlapping the lateral collateral ligament in all specimens, with some variability in the femoral attachment, ranging from directly on the lateral epicondyle to posterior to the lateral epicondyle.

CLINICAL RELEVANCE:

The identification and description of the femoral origin of the ALL are crucial in understanding its role in the stability of the knee, as well as determining the appropriate position for the femoral origin placement in ALL reconstruction.

PMID:26725451

32 A. KNEE/ACL**Predictors of ACL injury**

Knee Surg Sports Traumatol Arthrosc. 2015 Dec 24.

Predictor factors for lower extremity malalignment and non-contact anterior cruciate ligament injuries in male athletes.

Amraee D1, Alizadeh MH1, Minoonejhad H2, Razi M3, Amraee GH4.
Author information

Abstract

PURPOSE:

The aim of this study was to determine the predictor factors concerning the lower extremity alignment in non-contact anterior cruciate ligament (ACL) injuries among male athletes.

METHODS:

In a retrospective study, the unilateral navicular drop, the ankle dorsiflexion range of motion (ROM), internal tibia torsion, knee genu recurvatum, quadriceps angle, hip internal and external rotation ROM and hip anteversion were measured in 53 subjects with complete ACL injury and compared with these accepted standard values. To identify predictor factors for lower extremity alignment and non-contact ACL injuries in male athletes, a multiple logistic regression analysis method was performed. All the subjects were primarily assessed with activity modification and without an ACL reconstruction.

RESULTS:

The results of this study showed significant predictor correlations between the independent variables, ankle dorsiflexion, hip internal rotation and hip anteversion ($p < 0.05$). However, the differences in navicular drop, internal tibia torsion, knee hyperextension, Q angle and hip external rotation were non-significant.

CONCLUSION:

According to these findings, a decreased ROM in ankle dorsiflexion, hip internal rotation and increased hip anteversion appeared to be statistically significant predictors for developing non-contact ACL ligament injuries in male athletes. Based on the results of this study, significant predictor factors between lower extremity alignment and ACL injuries are clinically relevant as it confirms the existence of increased injury risk with certain patterns of skeletal alignment.

LEVEL OF EVIDENCE:

II.

KEYWORDS: Anterior cruciate ligament; Athletes; Lower extremity alignment; Non-contact injury

PMID:26704803

ACL acute injury

Eur Radiol. 2016 Jan 8.

Anterolateral ligament abnormalities in patients with acute anterior cruciate ligament rupture are associated with lateral meniscal and osseous injuries.

Van Dyck P¹, Clockaerts S², Vanhoenacker FM^{3,4,5}, Lambrecht V⁴, Wouters K⁶, De Smet E³, Gielen JL³, Parizel PM³.

Author information

Abstract

OBJECTIVE:

To determine the frequency of anterolateral ligament (ALL) injury in patients with acute anterior cruciate ligament (ACL) rupture and to analyse its associated injury patterns.

METHODS:

Ninety patients with acute ACL rupture for which MRI was obtained within 8 weeks after the initial trauma were retrospectively identified. Two radiologists assessed the status of the ALL on MRI by consensus. The presence or absence of an ALL abnormality was compared with the existence of medial and lateral meniscal tears diagnosed during arthroscopy. Associated collateral ligament and osseous injuries were documented with MRI.

RESULTS:

Forty-one of 90 knees (46 %) demonstrated ALL abnormalities on MRI. Of 49 knees with intact ALL, 15 (31 %) had a torn lateral meniscus as compared to 25 torn lateral menisci in 41 knees (61 %) with abnormal ALL ($p = 0.008$). Collateral ligament ($p \leq 0.05$) and osseous injuries ($p = 0.0037$) were more frequent and severe in ALL-injured as compared with ALL-intact knees.

CONCLUSION:

ALL injuries are fairly common in patients with acute ACL rupture and are statistically significantly associated with lateral meniscal, collateral ligament and osseous injuries.

KEY POINTS:

- ALL injuries are fairly common in patients with acute ACL rupture.
- ALL injuries are highly associated with lateral meniscal and osseous injuries.
- MRI assessment of ACL-injured knees should include evaluation of the ALL.

KEYWORDS: ACL rupture; Anterolateral ligament; Knee; Magnetic resonance imaging; Meniscal tears

PMID:26747257

35. KNEE/TOTAL**Gait of different surfaces**

Knee Surg Sports Traumatol Arthrosc. 2015 Dec 26.

Walking on a compliant surface does not enhance kinematic gait asymmetries after unilateral total knee arthroplasty.

Bjerke J^{1,2}, Öhberg F³, Nilsson KG⁴, Stensdotter AK^{5,6}.
Author information

Abstract

PURPOSE:

To investigate gait asymmetries and the effect of walking on compliant surfaces in individuals with unilateral total knee arthroplasty (TKA), hypothesizing that asymmetries would increase as an effect of the compliant surface.

METHODS:

Individuals with unilateral TKA ~19 months post-operative (n = 23, median age 59 years) recruited from one orthopaedic clinic and age- and gender-matched healthy individuals without knee complaints (n = 23, median age 56 years) walked at comfortable speed on a hard surface and on a compliant surface. 3D kinematic analyses were made for knee and hip angles in sagittal and frontal planes, stance time, step length, and gait velocity.

RESULTS:

Shorter stance time (p < 0.01) and less peak knee flexion (p < 0.001) at weight bearing acceptance was found in the prosthetic side compared with the contralateral side. Larger knee (p < 0.01) and hip (p < 0.001) adduction was found compared with healthy controls. Neither asymmetries between the prosthetic and the contralateral side nor differences compared with healthy controls were enhanced when walking on compliant surfaces compared with hard surfaces.

CONCLUSION:

The TKA group adapted their gait to compliant surfaces similarly to healthy controls. Gait asymmetries in the TKA group observed on hard surface were not enhanced, and adduction in hip and knee joints did not increase further as an effect of walking on compliant surfaces. Thus, unfavourable knee joint loading did not increase when walking on a compliant surface. This implies that recommendations for walking on soft surfaces to reduce knee joint loading are not counteracted by increased gait asymmetries and unfavourable joint loading configurations.

LEVEL OF EVIDENCE: III.

KEYWORDS: Hip joint adduction; Knee joint adduction; Knee joint flexion; Locomotion; Prosthesis

PMID:26708412

Weight bearing exercises help

May–June, 2016 Volume 64, Pages 45–50

Does a weight-training exercise programme given to patients four or more years after total knee arthroplasty improve mobility: A randomized controlled trial

Bayram Unver Serkan Bakirhan Vasfi Karatosun

Highlights

- •Strengthening exercise improves the muscle strength in postarthroplasty patients.
- •Weighted exercises were effective for increasing the strength of muscles and functionality.
- •Strengthening exercises could be continued by older patients without difficulty at home.

Abstract

Aim

To investigate the effects of the home exercise therapy performed after at least four years postoperatively on skeletal muscle strength and functionality in patients with total knee arthroplasty (TKA).

Methods

Sixty patients (age; 69.66 ± 7.53 , weight; 81.56 ± 14.43 kg, 10 male, 50 female) followed up four or more years were randomly divided into two groups. An 8-week exercise program was designed for bilateral TKA patients. While the patients in one group were assigned to weighted exercise group, the patients in the other group were assigned to non-weighted exercise group. The primary outcome was the isometric muscle strength of quadriceps femoris (QF) and hamstring muscles assessed by Hand-Held Dynamometer. The secondary outcomes were the pain level, 30 s sit-to-stand test, 10 m walk test, range of motion, and the knee function score of the Hospital for Special Surgery. The assessments were performed before and after the treatment.

Results

After treatment, significant differences were found in all evaluation parameters (except rest pain and range of motion) in favour of the weighted group. QF muscle strength changes (kg); weighted group: 1.99 ± 1.70 , non-weighted group: 0.51 ± 1.14 ($p = 0.000$), 30 s sit-to-stand test changes (repetitions); weighted group: 3.66 ± 2.23 , non-weighted group: 1.70 ± 1.95 ($p = 0.000$), 10 m walk test changes (seconds); weighted group: -2.60 ± 1.30 , non-weighted group: -0.83 ± 3.51 ($p = 0.000$).

Conclusion

Home exercise programs applied to TKA patients after at least four years postoperatively was effective in increasing muscle strength, decreasing severity of pain, and improving functional activities. The improvements were significantly greater in weighted compared with the non-weighted exercise group.

Keywords: Arthroplasty, Knee, Exercises, Late phase, Physical therapy, Rehabilitation, Mobility, Function

40. ANKLE SPRAINS AND INSTABILITY**High ankle sprain**

Arthroscopy. 2015 Dec 22. pii: S0749-8063(15)00813-0. doi: 10.1016/j.arthro.2015.10.003.

Stable Versus Unstable Grade II High Ankle Sprains: A Prospective Study Predicting the Need for Surgical Stabilization and Time to Return to Sports.

Calder JD1, Bamford R2, Petrie A3, McCollum GA4.

Author information

Abstract

PURPOSE:

To investigate grade II syndesmosis injuries in athletes and identify factors important in differentiating stable from dynamically unstable ankle sprains and those associated with a longer time to return to sports.

METHODS:

Sixty-four athletes with an isolated syndesmosis injury (without fracture) were prospectively assessed, with a mean follow-up period of 37 months (range, 24 to 66 months). Those with an associated deltoid ligament injury or osteochondral lesion were included. Those whose injuries were considered stable (grade IIa) were treated conservatively with a boot and rehabilitation. Those whose injuries were clinically unstable underwent arthroscopy, and if instability was confirmed (grade IIb), the syndesmosis was stabilized. Clinical and magnetic resonance imaging assessments of injury to individual ligaments were recorded, along with time to return to play. A power analysis estimated that each group would need 28 patients.

RESULTS:

All athletes returned to the same level of professional sport. The 28 patients with grade IIa injuries returned at a mean of 45 days (range, 23 to 63 days) compared with 64 days (range, 27 to 104 days) for those with grade IIb injuries ($P < .0001$). There was a highly significant relationship between clinical and magnetic resonance imaging assessments of ligament injury (anterior tibiofibular ligament [ATFL], anterior-inferior tibiofibular ligament [AITFL], and deltoid ligament, $P < .0001$). Instability was 9.5 times as likely with a positive squeeze test and 11 times as likely with a deltoid injury. Combined injury to the anterior-inferior tibiofibular ligament and deltoid ligament was associated with a delay in return to sports. Concomitant injury to the ATFL indicated a different mechanism of injury-the syndesmosis is less likely to be unstable and is associated with an earlier return to sports.

CONCLUSIONS:

A positive squeeze test and injury to the ATFL and deltoid ligament are important factors in differentiating stable from dynamically unstable grade II injuries and may be used to identify which athletes may benefit from early arthroscopic assessment and stabilization. They may also be important in predicting the time frame for athletes' expected return to play.

LEVEL OF EVIDENCE: Level II, prospective comparative study.

PMID:26725452

44. RHUMATOID ARTHRITIS

OA and work loss

Rheumatology (Oxford). 2016 Jan 11. pii: kev428.

Risk of work loss due to illness or disability in patients with osteoarthritis: a population-based cohort study.

Sharif B¹, Garner R², Sanmartin C², Flanagan WM², Hennessy D², Marshall DA³.

Author information

Abstract

OBJECTIVES:

To estimate the risk of work loss due to illness or disability in a cohort of employed persons with OA compared with matched non-OA individuals.

METHODS:

We performed a population-based cohort analysis using the last six cycles of the Canadian longitudinal National Population Health Survey from 2000 to 2010. OA cases and up to four age- and sex-matched non-OA individuals were selected. Discrete time hazard regression models were used to estimate the hazard of work loss due to illness or disability. To analyse the effect of a self-reported OA measure on the outcome, we performed a sensitivity analyses for case selection.

RESULTS:

From 7273 employed individuals between the ages of 20 and 70 years in the National Population Health Survey, 659 OA cases were selected and matched to 2144 non-OA individuals. The proportion of OA cases who experienced work loss due to illness or disability during the follow-up period was 12.6%, compared with 9.3% for non-OA individuals ($P < 0.001$). OA cases had a 90% [hazard ratio (HR) 1.90 (95% CI 1.36, 3.23)] higher hazard of work loss due to illness or disability compared with their matched non-OA individuals after adjusting for sociodemographic, health and work-related status. The adjusted HRs were 1.61 (95% CI 1.13, 2.30) and 2.04 (95% CI 1.74, 4.75) for females and males, respectively.

CONCLUSION:

OA is independently associated with an increased risk of work loss due to illness or disability. Given the high prevalence of OA in the population of working age, future research may wish to investigate ways to improve occupational participation among OA patients.

KEYWORDS: cohort study; epidemiology; osteoarthritis; work disability; workforce
PMID: 26759430

45 A. MANUAL THERAPY LUMBAR & GENERAL**Maitland lumbar mob****An investigation into the effects of applying a lumbar Maitland mobilisation at different frequencies on sympathetic nervous system activity levels in the lower limb**

Victoria Piekarz, BSc, MSc, MCSP, MMACP J.O. Perry, PhD, MSc, MCSP, MMACP (Principal Lecturer)¹

Highlights

- Maitland lumbar PA mobilisation at 2Hz creates sympathoexcitatory responses of 12%
- An atypical frequency mobilisation at 3Hz results in responses in the order of 20%
- Effects at 3Hz are at least comparable to effects of a standard 2Hz intervention
- Further research into high frequency manual therapy interventions is recommended

Abstract**Background**

Oscillatory Maitland mobilisations are commonly used in the management of lower back pain with research suggesting that mobilisations at 2Hz may excite the sympathetic nervous system (SNS) more than sustained pressure glides or 0.5Hz oscillatory mobilisations.

OBJECTIVES

Investigate the effects of increasing the oscillation frequency greater than 2Hz. *DESIGN*: A double-blind, placebo-controlled, independent group experimental design.

Method

Sixty healthy male volunteers were randomly allocated to one of four groups; A control group (no contact), placebo group (sustained static pressure to L4 vertebra), and two intervention groups receiving a centrally applied postero-anterior mobilisation applied at either 2Hz or 3Hz for three 1-minute periods. SNS activity was recorded by a blinded data collector by continuous skin conductance (SC) activity levels in the feet using a Biopac MP35 electrodermal amplifier. Participants were blinded to their group allocation which was further validated by a post-experiment questionnaire ($p > 0.05$).

Results

The magnitude of sympathoexcitatory response was greatest for the 3Hz mobilisation (20%) compared with the 2Hz mobilisation (12%), placebo (-1%) and control conditions (3%). Only the 3Hz group demonstrated statistical significance when compared to placebo intervention ($p = 0.002$), and the control group ($p = 0.02$).

Conclusion

SC changes reflect those of previous studies using lumbar mobilisations at 2Hz, however the 3Hz group was found to have a greater magnitude of effect worthy of consideration within research and clinical settings. These findings provide preliminary evidence to support the use of 3Hz oscillatory mobilisations to affect a greater magnitude of SNS activity than those previously reported (0.5, 1.5 and 2Hz).

Keywords: sympathetic nervous system, lumbar spine, joint mobilisations

45 B. MANUAL THERAPY CERVICAL

MT and whiplash

Spine J. 2015 Dec 17. pii: S1529-9430(15)01234-6. doi: 10.1016/j.spinee.2015.08.024.

Are manual therapies, passive physical modalities, or acupuncture effective for the management of patients with whiplash-associated disorders or neck pain and associated disorders? an update of the bone and joint decade task force on neck pain and its associated disorders by the optima collaboration.

Wong JJ¹, Shearer HM², Mior S³, Jacobs C⁴, Côté P⁵, Randhawa K⁴, Yu H⁴, Southerst D⁶, Varatharajan S⁴, Sutton D⁴, van der Velde G⁷, Carroll LJ⁸, Ameis A⁹, Ammendolia C¹⁰, Brison R¹¹, Nordin M¹², Stupar M¹³, Taylor-Vaisey A¹³.

Author information

Abstract

BACKGROUND CONTEXT: In 2008, the Bone and Joint Decade 2000-2010 Task Force on Neck Pain and its Associated Disorders (Neck Pain Task Force) found limited evidence on the effectiveness of manual therapies, passive physical modalities, or acupuncture for the management of whiplash-associated disorders (WAD) or neck pain and associated disorders (NAD).

PURPOSE: To update findings of the Neck Pain Task Force examining the effectiveness of manual therapies, passive physical modalities, and acupuncture for the management of WAD or NAD.

STUDY DESIGN/SETTING: Systematic review and best evidence synthesis.

SAMPLE: Randomized controlled trials (RCTs), cohort studies, case-control studies comparing manual therapies, passive physical modalities, or acupuncture to other interventions, placebo/sham, or no intervention.

OUTCOME MEASURES: Self-rated or functional recovery, pain intensity, health-related quality of life, psychological outcomes, or adverse events.

METHODS: We systematically searched five databases from 2000 to 2014. Random pairs of independent reviewers critically appraised eligible studies using the Scottish Intercollegiate Guidelines Network (SIGN) criteria. Studies with a low risk of bias were stratified by the intervention's stage of development (exploratory versus evaluation) and synthesized following best evidence synthesis principles. Funding was provided by the Ministry of Finance.

RESULTS: We screened 8551 citations, 38 studies were relevant, and 22 had a low risk of bias. Evidence from seven exploratory studies suggests that: 1) for recent but not persistent NAD I-II: thoracic manipulation offers short-term benefits; 2) for persistent NAD I-II: technical parameters of cervical mobilization (e.g., direction or site of manual contact) do not impact outcomes, while one session of cervical manipulation is similar to Kinesiotaping; and 3) for NAD I-II: strain-counterstrain treatment is no better than placebo. Evidence from 15 evaluation studies suggests that: 1) for recent NAD I-II: cervical and thoracic manipulation provides no additional benefit to high-dose supervised exercises; Swedish/clinical massage adds benefit to self-care advice; 2) for persistent NAD I-II: home-based cupping massage has similar outcomes to home-based muscle relaxation; low-level laser therapy (LLLT) does not offer benefits; Western acupuncture provides similar outcomes to non-penetrating placebo electroacupuncture; needle acupuncture provides similar outcomes to sham-penetrating acupuncture; 3) for WAD I-II: needle electroacupuncture offers similar outcomes as simulated electroacupuncture; and 4) for recent NAD III: a semi-rigid cervical collar with rest and graded strengthening exercises lead to similar outcomes; LLLT does not offer benefits.

CONCLUSIONS: Our review adds new evidence to the Neck Pain Task Force and suggests that mobilization, manipulation, and clinical massage are effective interventions for the management of neck pain. It also suggests that electroacupuncture, strain-counterstrain, relaxation massage, and some passive physical modalities (heat, cold, diathermy, hydrotherapy, ultrasound) are not effective and should not be used to manage neck pain.

KEYWORDS: acupuncture; manual therapy; neck pain and associated disorders; passive physical modalities; systematic review; whiplash-associated disorders

PMID:26707074

48 A. STM

Fascial integrity and BP

Fascial hierarchies and the relevance of crossed-helical arrangements of collagen to changes in shape; part II: The proposed effect of blood pressure (Traube-Hering-Mayer) waves on the fascia★

Graham Scarr, CBiol., FRSB., FLS., DO

Summary

Periodic changes in arterial pressure and volume have long been related to respiratory and sympathetic nerve activity (Traube-Hering-Mayer waves) but their origins and nomenclature have caused considerable confusion since they were first discovered in the eighteenth century. However, although they remain poorly understood and the underlying details of their control are

complicated, these waves do provide valuable clinical information on the state of blood pressure regulation in both normal and pathological conditions; and a correlation with oscillatory motions observed by certain practitioners suggests that they may also have some physiological value that relates to changes in the volume of fascial ‘tubes’.

Part I of this paper (Scarr, 2016) described a complex fascial network of collagen-reinforced tubular sheaths that are an integral part of muscle structure and function, and continuous with ‘higher-level’ fascial tubes surrounding groups of muscles, the limbs and entire body. The anisotropic arrangements of collagen fibres within the walls of these tubes reflect the most efficient distribution of mechanical stresses and have been considered to coordinate changes in shape, and a proposed link between cyclic variations in arterial pressure and volume, and the behaviour of these fascial compartments is now described.

Keywords: Arterial pressure waveform, Collagen, Cranial rhythmic impulse, Fascia, Helix, Interstitial fluid flow, Mayer waves, Myofascia, Traube Hering

Fascia

A fascia and the fascial system

Carla Stecco, MD (Professor)

Professor of Human Anatomy and Movement Science, University of Padua, Italy

Robert Schleip, Dr. Biol. Hum.

Division of Neurophysiology, Ulm University, Germany

DOI: <http://dx.doi.org/10.1016/j.jbmt.2015.11.012>

One of the main topics of the last Fascia Research Congress (Washington, 17–21 September 2015) was the terminology about fascia. Many researchers are convinced that the indiscriminate use of the term “fascia” in reference to various types of connective tissue often leads to confusion. Furthermore, inconsistent use of anatomical terms makes it difficult to compare results

across research studies and to draw generalized conclusions (Langevin, 2014). This situation may be comparable to a time in anatomy history described by Adstrum (2014): “more than 50,000 terms were used to identify 5000 structures, so, anatomical terminology was in a state of chaos, incoherent, full of inequities, contradictions, and obscurities”.

51. CFS/BET

Body awareness

Refugee experiences of individual basic body awareness therapy and the level of transference into daily life. An interview study

Trine Stårup Madsen, PT Jessica Carlsson, M.D., PhD Maja Nordbrandt, M.D,
Jonna Anne Jensen, PT, M Edu

Purpose

The aim of the study was to investigate refugee experiences of individual Basic Body Awareness Therapy (BBAT) and the level of transference into daily life.

Method

Qualitative research using semi-structured interviews. Malterud's version of Giorgi's 4-step analysis was used to analyse the data.

Participants

Three traumatised refugees with PTSD who had completed 14–20 individual BBAT sessions.

Results

The participants experienced the movements in BBAT as small and simple with big effects. BBAT was found to relieve pain and tension, bring peace of mind and body, and make it easier to sleep. Regular practice was necessary, as were instructions from a physiotherapist, to get the effect from BBAT. Positive changes in the contact to oneself and others were experienced and new coping strategies were developed.

Conclusion

Traumatised refugees experienced positive effects from BBAT and transference into daily life was experienced to a great extent.

Keywords: Basic Body Awareness Therapy, Physiotherapy, Traumatised refugees, Torture survivors, Post Traumatic stress disorder, Patient perspective, Qualitative study

54. POSTURE

LBP postural grouping

Reproducibility of the low back clinical postural grouping in adolescents

Ney Meziat-Filho, PT, PhD Roberta Mendonça, PT Adriano Pezolato, PT, MSc,
Felipe J.J. Reis, PT, PhD Leandro Alberto Calazans Nogueira, PT, PhD

Objective

The purpose of this study was to analyze the intra- and inter-rater reliability of the Low Back Clinical Postural Grouping (LBCPG).

Methods

Fifty-eight school adolescents were evaluated by lateral photography. The examiners classified the posture of the participants as: hyperlordotic, sway back, flat back or neutral. The intra- and inter-rater reliability were quantified by the percentage agreement between clinicians and the kappa coefficient with 95% confidence intervals (95% CI).

Results

The intra-rater percentage agreement was 91.4%, $k = 0.87$ (95% IC 0.77–0.98, $p < 0.001$) for the more experienced rater, and 86.2% $k = 0.79$ (IC 95% 0.62–0.96, $p < 0.001$) for the less experienced rater. The percentage agreement between clinicians was 55.17% $k = 0.39$ (95% CI: 0.23–0.55, $p < 0.001$). The agreement rose to 70.69%, $k = 0.58$ (95% CI 0.41–0.74, $p < 0.001$) when an optional second opinion of the raters was also considered. Conclusion: The LBCPG was reliable when used by the same clinician. The strategy of a second opinion could be used to improve the inter-rater reliability in epidemiological studies with large samples.

Keywords: Posture, Spine, Reproducibility, Physiotherapy

57. GAIT**TKR gait**

Knee Surg Sports Traumatol Arthrosc. 2015 Dec 26.

Walking on a compliant surface does not enhance kinematic gait asymmetries after unilateral total knee arthroplasty.

Bjerke J^{1,2}, Öhberg F³, Nilsson KG⁴, Stensdotter AK^{5,6}.
Author information

Abstract

PURPOSE:

To investigate gait asymmetries and the effect of walking on compliant surfaces in individuals with unilateral total knee arthroplasty (TKA), hypothesizing that asymmetries would increase as an effect of the compliant surface.

METHODS:

Individuals with unilateral TKA ~19 months post-operative (n = 23, median age 59 years) recruited from one orthopaedic clinic and age- and gender-matched healthy individuals without knee complaints (n = 23, median age 56 years) walked at comfortable speed on a hard surface and on a compliant surface. 3D kinematic analyses were made for knee and hip angles in sagittal and frontal planes, stance time, step length, and gait velocity.

RESULTS:

Shorter stance time ($p < 0.01$) and less peak knee flexion ($p < 0.001$) at weight bearing acceptance was found in the prosthetic side compared with the contralateral side. Larger knee ($p < 0.01$) and hip ($p < 0.001$) adduction was found compared with healthy controls. Neither asymmetries between the prosthetic and the contralateral side nor differences compared with healthy controls were enhanced when walking on compliant surfaces compared with hard surfaces.

CONCLUSION:

The TKA group adapted their gait to compliant surfaces similarly to healthy controls. Gait asymmetries in the TKA group observed on hard surface were not enhanced, and adduction in hip and knee joints did not increase further as an effect of walking on compliant surfaces. Thus, unfavourable knee joint loading did not increase when walking on a compliant surface. This implies that recommendations for walking on soft surfaces to reduce knee joint loading are not counteracted by increased gait asymmetries and unfavourable joint loading configurations.

LEVEL OF EVIDENCE: III.

KEYWORDS: Hip joint adduction; Knee joint adduction; Knee joint flexion; Locomotion; Prosthesis
PMID:26708412

58. RUNNING**TL fascia****The effects of dorso-lumbar motion restriction on the ground reaction force components during running**

Joseph J. Morley, DC, PhD Edward Traum, DC
DOI: <http://dx.doi.org/10.1016/j.jbmt.2015.11.013>

Purpose The effects of restricting dorso-lumbar spine mobility on ground reaction forces in runners was measured and assessed.

Methods A semi-rigid cast was used to restrict spinal motion during running. Subjects ran across a force platform at 3.6 metres/second, planting the right foot on the platform. Data was collected from ten running trials with the cast and ten without the cast and analysed.

Results Casted running showed that the initial vertical heel strike maximum was increased ($p < .02$) and that the anterior-posterior deceleration impulse was increased ($p < .01$). The maximum vertical ground reaction force was decreased in casted running ($p < .01$), as was the anterior-posterior acceleration impulse ($p < .02$). There was a trend for increased medial-lateral impulse in the uncasted state, but this was not statistically significant.

Conclusions Spinal mobility and fascia contribute to load transfer between joints and body segments. Experimentally restricting spinal motion during running results in measurable and repeatable alterations in ground reaction force components. Alterations in load transfer due to decreased spinal motion may be a factor contributing to selected injuries in runners.

Keywords: Spinal mobility restriction, casting, ground reaction force components

59. PAIN

Pacing and pain

J Pain. 2015 Dec 23. pii: S1526-5900(15)00997-9. doi: 10.1016/j.jpain.2015.12.009.

Development and initial validation of the Activity Patterns Scale in patients with chronic pain.

Esteve R¹, Ramírez-Maestre C², Peters ML³, Serrano E², Ruíz-Párraga GT², López-Martínez AE².

Author information

Abstract

Several self-report measures were used to identify six activity patterns in chronic pain patients: pain avoidance, activity avoidance, task-contingent persistence, excessive persistence, pain-contingent persistence, and pacing. Instruments for assessing pacing should include three pacing behaviours (breaking tasks into smaller tasks, taking frequent short rests, slowing down), each of which relate to a single goal (increasing activity levels, conserving energy for valued activities, and reducing pain). This article presents the Activity Patterns Scale (APS), which assesses these six activity patterns. Study 1 included 291 participants with chronic pain, and tested three structures using confirmatory factor analyses. The structure with the best fit had eight factors corresponding to the hypothesized scales. High correlations in the expected direction were found between the APS subscales and the "Patterns of Activity Measure-Pain". Study 2 included 111 patients with chronic pain, and aimed at examining the association between the APS subscales and adjustment to pain. It was found that activity avoidance was associated with daily functioning and impairment. Negative affect was positively associated with activity avoidance and excessive persistence, and negatively associated with task-contingent persistence, which was also positively associated with positive affect. This study showed that the APS is a valid and reliable instrument for clinical practice and research.

PERSPECTIVE:

This article presents a valid and reliable instrument to assess activity patterns in patients with chronic pain. The findings suggest that avoidance, persistence, and pacing are multidimensional constructs. Distinguishing between these dimensions sheds light on previous contradictory results and has direct clinical implications regarding recommending the most advisable activity patterns.

KEYWORDS: activity patterns; avoidance; chronic pain; pacing; persistence

PMID: 26724275

Black and White's reactions

Differences in pain coping between Black and White Americans: A meta-analysis

The Journal of Pain, 01/14/2016 Meints SM, et al.

The goal of this meta-analytic review was to quantify race differences in the overall use of pain coping strategies as well as specific coping strategies. These results suggest that Black individuals use coping strategies more frequently, specifically strategies associated with poorer pain

outcomes. Future research should examine the extent to which the use of these strategies mediates race differences in the pain experience.

Methods

- Relevant studies were identified using electronic databases, an ancestry search, and by contacting authors for unpublished data.
- Of 150 studies identified, 19 met inclusion criteria, resulting in 6489 participants and 123 effect sizes.
- All of the included studies were conducted in the United States.

Results

- Mean effect sizes were calculated using a random effects model.
- Compared to White individuals, Black individuals used pain coping strategies more frequently overall ($d=0.25$, $p<0.01$), with the largest differences observed for praying ($d=0.70$) and catastrophizing ($d=0.40$).
- White individuals engaged in task persistence more than Black individuals ($d=-0.28$).

Vit C preop helps post pain

Clin J Pain. 2016 Feb;32(2):179-85. doi: 10.1097/AJP.0000000000000218.

Effect of Perioperative Vitamin C Supplementation on Postoperative Pain and the Incidence of Chronic Regional Pain Syndrome: A Systematic Review and Meta-Analysis.

Chen S¹, Roffey DM, Dion CA, Arab A, Wai EK.

Author information

Abstract**OBJECTIVES:**

Postoperative pain can contribute to increased risk for complications and lengthened hospital stays. The objective was to analyze the effects of perioperative vitamin C supplementation on postoperative pain and the development of complex regional pain syndrome I (CRPS I) in patients undergoing surgical procedures.

MATERIALS AND METHODS:

A systematic review of published literature was performed through April 2014. References from relevant studies were scanned for additional studies. Results were screened for relevance independently, and full-text studies were assessed for eligibility. Reporting quality was assessed using a modified Newcastle-Ottawa Scale.

RESULTS:

The search strategy yielded 710 studies, of which 13 were included: 7 on postoperative pain and 6 on CRPS I. In the final analysis, 1 relevant study found a reduction in postoperative morphine utilization after preoperative vitamin C consumption, whereas another showed no difference in postoperative pain outcomes between the vitamin C and control groups. A meta-analysis of 3 applicable CRPS I studies showed a decrease in postoperative CRPS I after perioperative vitamin C supplementation (relative risk=2.25; $\tau=0$).

DISCUSSION:

There is moderate-level evidence supporting the use of a 2 g preoperative dose of vitamin C as an adjunct for reducing postoperative morphine consumption, and high-level evidence supporting perioperative vitamin C supplementation of 1 g/d for 50 days for CRPS I prevention after extremity surgery. Additional studies are necessary to increase the level of evidence to determine the overall effectiveness and optimum dosage of vitamin C.

PMID:25654537

Pain impact

J Pain. 2015 Dec 20. pii: S1526-5900(15)00981-5. doi: 10.1016/j.jpain.2015.12.005.

Between the devil and the deep blue sea: avoidance-avoidance competition increases pain-related fear and slows down decision-making.

Claes N¹, Crombez G², Meulders A³, Vlaeyen JW⁴.

Author information

Abstract

Successful adjustment to dynamic environments requires the simultaneous pursuit of multiple goals. However, the pursuit of multiple goals may bring about goal conflict. Despite evidence indicating that goal conflict can have a detrimental effect on subjective well-being, little is known about the effects of goal competition in the context of pain. This experiment investigated whether different types of goal competition increase pain-related fear and slow down pain-related decision-making. Forty-six participants completed a cross-directional movement task in which they learned to associate movements in one direction (e.g. left) with pain, and movements in the opposite direction (e.g. right) with safety; and that movements in other directions (e.g. up - down) were associated with reward and loss of reward, respectively. In the test phase, both phases were combined, creating different types of goal competition. The results showed that participants were most afraid of movements associated with two concurrent avoidance goals, and the least afraid of movements associated with approach-approach conflict. Additionally, participants were slower in making a choice when presented with an avoidance-avoidance conflict compared to approach-approach and avoidance-approach conflicts. These findings suggest that avoidance-avoidance conflicts increase fear and slow down decision-making compared to other types of conflict.

PERSPECTIVE:

This study provides experimental evidence for the differential impact of various goal conflicts on pain-related fear and decision-making. This knowledge may improve our understanding of patients' behavior when experiencing goal conflict and may contribute to improving treatments by addressing multiple goals patients are pursuing, and not just pain avoidance/reduction.

KEYWORDS: avoidance; goals; motivation; pain; reward
PMID:26713775

Pain beliefs

Clin J Pain. 2016 Feb;32(2):164-78. doi: 10.1097/AJP.0000000000000235.

Do Pain-related Beliefs Influence Adherence to Multidisciplinary Rehabilitation?: A Systematic Review.

Thompson EL¹, Broadbent J, Bertino MD, Staiger PK.
Author information

Abstract

OBJECTIVES:

To understand how pain-related cognitions predict and influence treatment retention and adherence during and after a multidisciplinary rehabilitation program.

METHODS:

Electronic databases including Medline, CINAHL, PsycINFO, Academic Search Complete, and Scopus were used to search 3 combinations of key words: chronic pain, beliefs, and treatment adherence.

RESULTS:

The search strategy yielded 591 results, with an additional 12 studies identified through reference screening. Eighty-one full-text papers were assessed for eligibility and 10 papers met the inclusion and exclusion criteria for this review. The pain-related beliefs that have been measured in relation to treatment adherence include: pain-specific self-efficacy, perceived disability, catastrophizing, control beliefs, fear-avoidance beliefs, perceived benefits and barriers, and other less commonly measured beliefs. The most common pain-related belief investigated in relation to treatment adherence was pain-related self-efficacy. Findings for the pain-related beliefs investigated among the studies were mixed. Collectively, all of the aforementioned pain-related beliefs, excluding control beliefs, were found to influence treatment adherence behaviors.

DISCUSSION:

The findings suggest that treatment adherence is determined by a combination of pain-related beliefs either supporting or inhibiting chronic pain patients' ability to adhere to treatment recommendations over time. In the studies reviewed, self-efficacy appears to be the most commonly researched predictor of treatment adherence, its effects also influencing other pain-related beliefs. More refined and standardized methodologies, consistent descriptions of pain-related beliefs, and methods of measurement will improve our understanding of adherence behaviors.

PMID:26735864

65. NEUROLOGICAL CONDITIONS

Vit D improves MS

Taking vitamin D may benefit people with multiple sclerosis

Johns Hopkins Medicine, 01/05/2016

Taking a high dose of vitamin D3 is safe for people with multiple sclerosis and may help regulate the body's hyperactive immune response, according to a pilot study published by Johns Hopkins

ABSTRACTS

physicians in the Dec. 30 online issue of *Neurology*. “These results are exciting, as vitamin D has the potential to be an inexpensive, safe and convenient treatment for people with MS,” says study author Peter Calabresi, M.D., director of the Johns Hopkins Multiple Sclerosis Center and professor neurology at the Johns Hopkins University School of Medicine. “More research is needed to confirm these findings with larger groups of people and to help us understand the mechanisms for these effects, but the results are promising.” Low levels of vitamin D in the blood are tied to an increased risk of developing MS. People who have MS and low levels of vitamin D are more likely to have greater disability and more disease activity.