The form and structure of the extruded disc

Brock M, Patt S, Mayer H-M.
Spine 1992; 17(12):1457–1461.

There are no detailed data in literature concerning the histologic nature of the sequestered (extruded) lumbar disc, and on the frequency with which an extruded fragment, a prolapse or a protrusion are found at surgery. A prospective analysis of 100 consecutive cases of sequestered lumbar disc herniation submitted to surgical treatment revealed this group to represent 28.6% of all cases operated on for lumbar disc herniation. Patients (both male and female) with sequestered lumbar discs are significantly older than those with prolapsed ($P < 0.01$) and protruded ($P < 0.001$) discs. Single extruded fragments (n = 68) were twice as frequent as multiple ones (n = 32).

The general belief that a 'sequestered (extruded) disc' is almost invariably composed of nucleus pulposus is not substantiated by this study: In 54 cases the extruded fragment consisted predominantly of nucleus material, whereas in 44 cases cases it consisted mainly of end-plate material.

Multiple as well as recurrent sequestered fragments almost always consist of end-plate material. These findings may reflect the result of metabolic alterations in the course of disc degeneration.

Cauda equina syndrome in patients undergoing manipulation of the lumbar spine

Haldeman S, Rubinstein SM.
Spine 1992; 17(10):1469–1473.

Cauda equina syndrome has been implicated as a potential complication of spinal manipulation. A review of the literature from 1911 to 1989 revealed ten reported cases of cauda equina syndrome in patients undergoing manipulation without anesthesia. This article presents three new cases where a temporal association was found between the onset of cauda equina symptoms and lumbar manipulation. The type of manipulation administered and the relationship between the treatment and symptoms is reviewed. In each of these cases both the chiropractic practitioner and the emergency room physician failed to comprehend the nature of the problem and take appropriate action. As a consequence, the patients went untreated for several days. This may have led to residual symptomatology. It is concluded that patients who present with bowel or bladder disturbances, leg weakness, or rectal and genital sensory changes after manipulation, be recognized as experiencing a cauda equina syndrome.

Effects of cervical collars on standing balance

Burl MM, Williams JG, Nayak USL.
Arch Phys Med Rehabil 1992; 73:1181–1185.

The effect of cervical collars on standing balance in two age groups was examined. Twenty healthy women aged 60 to 78 years and 20 healthy women aged 18 to 29 years stood on a Kistler force platform with and without a cervical collar. Total, lateral and anteroposterior sway velocity were measured in each of three positions: long-base stance and eyes open, wide-base stance and eyes open, and wide-base stance and eyes closed. Analysis of variance showed no significant difference ($p < .05$) between the collar and no collar conditions for any of the standing balance measures. Older women had significantly more sway velocity ($p < .001$) than younger women during long-base standing both with and without the collar. Also they showed significantly more sway velocity in both total ($p < .01$) and the anterposterior (AP) directions ($p < .001$) of wide-base standing. There were no significant lateral sway velocity differences ($p < .05$). With eyes closed, sway velocity was greater in all age groups. In the wide-based condition there were significant differences in sway velocity between AP ($p < .001$) and total and lateral ($p < .01$). These results indicate that a cervical collar does not disturb standing balance in healthy women in the age groups tested.

Criteria for return to contact activities following cervical spine injury

Torg JS, Glasgow SG.
Clin J Sport Med 1991; 1(1):12–26.

The literature dealing with the diagnosis and treatment of cervical spine injuries is considerable. Absent, however, are comprehensive criteria or guidelines for permitting or prohibiting return to contact activities. The purpose of this report is to describe congenital, developmental, as well as posttraumatic conditions of the cervical spine as presenting either (a) no contraindication, (b) relative contraindication, or (c) an absolute contraindication to continued participation. In addition to reviewing the relevant concepts of Bailes, Watkins, and White, a comprehensive set of guidelines is presented. In addition, "spear tackler's spine," an absolute contraindication to participation, is described. Also recommendations for managing individuals following cervical spine fusion are suggested.

Atypical idiopathic scoliosis: MR imaging evaluation

Barnes PD, Brody JD, Jaramillo D, Akbar JU, Emans JB.
Radiology 1993; 186(1):247–253.

The authors analyzed the clinical and imaging findings in 30 consecutive pediatric, adolescent, and young adult patients who underwent MR imaging because of atypical features of idiopathic scoliosis. Atypical clinical and plain radiographic features included early onset ($n = 4$), rapid progression ($n = 19$), pain ($n = 17$), other neurologic symptoms or signs ($n = 12$), associated syndromes ($n = 4$), a convex left thoracic or thoracolumbar curve ($n = 18$), a kyphotic component ($n = 7$), and pedicle thinning ($n = 4$). MR imaging demonstrated 17 abnormalities in 11 patients: lumbar disc protrusions ($n = 1$), patulous intradural space (dural ectasia) ($n = 3$), hydrosyringomyelia ($n = 7$), Chiari I malformation ($n = 5$), and cord astrocytoma ($n = 1$). Significant associations with abnormal MR imaging findings were shown for patients with pain, weakness, abnormal neurologic findings, and atypical curvatures. Furthermore, there was a striking association of convex left thoracic or

thoracolumbar scoliosis with hydrosyringomyelia (six of seven cases). On the basis of these results, "atypical" spinal curvatures at radiography and "atypical" clinical features should prompt performance of additional diagnostic studies.

The back pain of bus drivers – prevalence in an urban area of California

Anderson R. Spine 1992; 17(12):1481–1488.

A stratified random sample of 195 subjects was selected from the membership of an urban transit union in California, two thirds consisting of motor coach operators and one third serving as a nondriving comparison group. Based on an orthopaedic medical history and physical examination, 80.5% of drivers were found to be experiencing back or neck pain at the time of examination, in contrast with 50.7 percent of nondrivers, itself a sizable percentage. For both groups, most pain was mild, (53.9 and 29.9%, respectively). The amount of severe pain was essentially the same in the two groups (10.2% and 9.0%). Both groups were most subject to low back pain. Drivers were most distinctive for movement-related pain in the cervical spine. They were also more subject in any part of the spine to postural pain. The latter finding suggests the need to introduce ergonomic and scheduling changes in the work of operating a motor coach. Drivers more than nondrivers struggled against their pain by doing exercise, seeking professional treatment, and taking medications, indicating that spinal disorders constitute a prominent health concern for workers in this occupation.

Transcranial Doppler ultrasonic features in chronic tension-type headache

Wallasch T-M. Cephalalgia 1992; 12:385–386.

We studied vascular features in patients suffering from chronic headache of the tension-type by means of transcranial Doppler ultrasound (TCD). Blood flow velocities of the basal cerebral arteries and the submandibular extracranial part of the internal carotid artery were compared between 20 chronic tension-type headache sufferers and the same number of age- and sex-matched control subjects. There were no significant differences of ultrasonic features between the groups. Changes in blood flow velocities do not seem to be involved in the pathogenetic mechanisms of chronic tension-type headache.

Visual field loss after attacks of migraine with aura

Drummond PD, Anderson M.
Cephalalgia 1992; 12:349–352.

Visual fields were mapped with kinetic arc perimetry in 23 migraine with aura subjects and, for comparison, in 20 migraine without aura subjects and in 21 non-headache controls. Central vision on the Amsler eye chart and visual perception threshold on a computer task were also investigated. Measures were obtained at least seven days after an episode of migraine. In addition, 10 of the migraine with aura subjects and 10 migraine without aura subjects were studied the day after an attack. The day after migraine with aura, visual sensitivity in the periphery of the visual fields was depressed, central vision was blurred, and visual perception threshold was elevated. These visual disturbances had resolved 7 to 10 days later. With the exception of a minor increase in visual perception threshold, vision was normal after attacks of migraine without aura. Residual effects of the migraine aura could mediate the subclinical visual disturbances which persist for at least one day after attacks of migraine with aura.

Bone density at various sites for prediction of hip fractures

Cummings SR, Black DM, Nevitt MC, Browner W, Cauley J, Ensrud K, Genant HK, Palermo L, Scott J, Vogt TM.
Lancet 1993; 341:72–75.

Women with low bone density in the radius or calcaneus are at increased risk of hip fracture. To see whether bone density of the hip measured by dual X-ray absorptiometry is a better predictor of hip fracture than measurements of other bones, we assessed bone density at several sites in 8,134 women aged 65 years or more.

65 women had hip fractures during a mean follow-up of 1.8 years. Each SD decrease in femoral neck bone density increased the age-adjusted risk of hip fracture 2.6 times (95% CL 1.9, 3.6). Women with bone density in the lowest quartile had an 8.5-fold greater risk of hip fracture than those in the highest quartile. Bone density of the femoral neck was a better predictor than measurements of the spine ($p < 0.0001$), radius ($p < 0.002$), and moderately better than the calcaneus ($p = 0.10$).

Low hip bone density is a stronger predictor of hip fracture than bone density at other sites. Efforts to prevent hip fractures should focus on women with low hip bone density.

Vertigo and the anterior inferior cerebellar artery syndrome

Oas JG, Baloh RW.Neurology 1992; 42:2274–2279.

We present two patients with clinical features of infarction in the distribution of the anterior inferior cerebellar artery (AICA) who had vertigo as an isolated symptom for several months prior to infarction. Both had risk factors for cerebrovascular disease and other episodes of transient neurologic symptoms not associated with vertigo. At the time of infarction they developed vertigo, unilateral hearing loss, tinnitus, facial numbness, and hemiataxia. MRI identified hyperintense lesions in the lateral pons and middle cerebellar peduncle on T_2-weighted images. Audiometry and electronystagmography documented absent auditory and vestibular function on the affected side. Since the blood supply to the inner ear and the vestibulocochlear nerve arises from AICA, a combination of peripheral and central symptoms and signs is characteristic of the AICA infarction syndrome. The vertigo that preceded infarction may have resulted from transient ischemia to the inner ear or the vestibular nerve.

Anticoagulant treatment as a risk factor for primary intracerebral haemorrhage

Fogelholm R, Eskola K, Kiminkinen T, Kunnamo I.
J Neurol Neurosurg Psychiatry 1992; 55:1121–1124.

Forty one (14.2%) of 288 patients with primary intracerebral haemorrhage occurring between September 1985 and December 1989 in Central Finland were on anticoagulant treatment at the onset of symptoms. In a sample of 29,000 subjects from the same population the prevalence of anticoagulant treatment was 1.6% in those aged 40 years or older. The estimated age adjusted odds ratio of being on anticoagulant treatment at the time of primary intracerebral haemorrhage was 6.7 (95% CI from 4.5 to 9.9). The risk was highest during the first year of anticoagulation. Overtreatment (thrombotest value < 5%) was slightly more common among the patients. The haematoma volumes measured from the CT scans were similar in patients on anticoagulant treatment and those not anticoagulated. The case fatality rate during the first week and the mortality during follow up of 32 months were slightly higher, and the functional outcome slightly worse in the anticoagulated group.

Warning headache in aneurysmal subarachnoid hemorrhage

Furui T. Headache Quarterly,
Current Treatment and Research 1992; 3(4):443–447.

Objective: To determine the clinical significance of so-called warning headache in cases with intracranial aneurysm.
Design: Retrospective analysis from medical records of warning headache defined as head pain prior to massive subarachnoid hemorrhage, and report of illustrative cases with a history of the headache.
Subjects: Forty-nine patients diagnosed as having subarachnoid hemorrhage due to rupture of intracranial aneurysm who were hospitalized at Aichi Medical University Hospital, Aichi, Japan, over a 4-year period.
Results: Approximately one-third of the cases had a history of warning headache with a higher incidence in younger patients. The headaches were not severe and seldom localized in the occiput and neck, unlike headaches due to massive subarachnoid hemorrhage. They preceded the appearance of symptoms of subarachnoid hemorrhage with an interval from 5 hours to 2 months.
Conclusion: Warning headache is a noteworthy sign for early diagnosis of intracranial aneurysm before devastating subarachnoid hemorrhage.

Migraine-associated dizziness

Cutrer F.M., Baloh RW. Headache 1992; 32:300–304.

The authors reviewed the clinical histories, examinations and results of quantitative vestibular testing in 91 patients with migraine-associated dizziness. Nausea and vomiting, hypersensitivity to motion, and postural instability accompanied the dizziness. In the majority of patients, the temporal profile of the dizziness was more typical of the headache phase of migraine than of the aura phase. Nineteen patients (20.9 percent) had unilateral hypoexcitability to caloric stimulation, which represents a modestly increased risk of damage to the peripheral vestibular apparatus. They propose two separate pathophysiologic mechanisms for the production of dizziness with migraine: Short-duration vertiginous attacks lasting minutes to 2 hours and temporally associated with headache are due to the same mechanism as other aura phenomena (spreading wave of depression and/or transient vasospasm). Longer-duration attacks of vertigo and motion sickness lasting days, with or without headache, result from the release of neuroactive peptides into peripheral and central vestibular structures, causing an increased baseline firing or primary afferent neurons and increased sensitivity to motion.

Cervicogenic headache: anesthetic blockades of cervical nerves (C2–C5) and facet joint (C2/C3)

Bovim G, Berg R, Dale LG.
Pain 1992; 49:315–320.

In a series of 14 patients with cervicogenic headache, cervical nerve blockades (C2–C5 and facet joint C2/C3) have been carried out in order to elucidate possible underlying mechanisms and to evaluate the diagnostic potential of these procedures. Blockade of the C2 nerve resulted in freedom from pain in 5 of 10 patients and seemed to be the most informative procedure. Two patients out of 9 reported freedom from pain following C2/C3 facet joint injection. No patients experienced complete pain relief following C3, C4 or C5 blockades. C4 and C5 nerve blockades are probably of little value in the work-up of such patients. When evaluating C2/C3 facet joint injection, one has to take possible leakage of anesthetic agent from the joint into consideration, since the third occipital nerve which runs close to the facet joint may be anesthetized through the leakage.

Neurolysis of the greater occipital nerve in cervicogenic headache: a follow up study

Fredriksen TA, Stolt-Nielsen A, Sjaastad O.
Headache 1992; 32:175–179.

Entrapment of the greater occipital nerve (GON) in its peripheral course has been thought to be of possible pathogenic significance in cervicogenic headache. The authors have performed a "liberation" operation ("neurolysis") of the nerve in the nuchal musculature, with special attention to the trapezius insertion, and the follow-up results in 50 patients are presented. The immediate effect of the operation was quite good, but the pain gradually recurred in the majority (46/50) of the patients. Eventually, all operated patients will probably have recurrence of pain episodes. Nevertheless, most patients claim that the overall disability is less after the operation, and 40 percent actually want to undergo a new, identical procedure. The justification for doing a second "liberation" operation is clearly less than for a first operation. In their opinion, this operation should not be performed in patients with cervicogenic headache in general. The present study shows that other therapeutic approaches should be searched for in cervicogenic headache.