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GENERAL DISCUSSION OF THE PAPERS

By HARRIS and BELL, MCMILLAN and SILVER, GRÜNINGER and GRUB, DE ARALUZE, CHANHAL *et al.*, CAST.

Subject: Spinal Stenosis

Chairman. Sir George Bedbrook. QUESTIONER. One of your patients was not subjected to surgery, but was treated 'conservatively'. What criteria influenced you in making this decision?

Then regarding Dr Araluze's paper, it may be a problem in language, but I would like to mention that a severe body shift in the cervical spine cannot be called a subluxation as we were shown in the radiographs. A shift of about 10 to 12 mms at least, as seen in one of your patients is clearly more than a subluxation. The X-rays were probably taken either in flexion or extension—none were taken in the neutral position, and in that respect I find difficulty in evaluating the degree of shift.

MR HARRIS and MR BELL (*U.K*). One patient had no operation in our small series and the reason was that this patient had symptoms of pain and paraesthesiae without significant signs, and was followed up over a long period of time and responded well to physiotherapy. The condition did not progress and so far we have not decided to operate on this patient. The other patients were all seriously affected and required surgery.

DR ARALUZE (*Spain*). I made it clear that displacement of one vertebra was considered abnormal. On the other hand we have to consider that patients and we ourselves are frequently moving our necks forwards and backwards. We prefer a dynamic study rather than a static one. Some patients who have a subluxation with pain in the neck or in the arm from cervical disc disease are relieved by a collar which prevents movement to either side so that taking X-rays in the 'neutral position' does not add any more information than flexion/extension studies.

DR MASRI (*U.K.*). What type of injuries did Dr Ahmed mention in his paper and what is his timing for surgery, which as I understand it, was mostly for decompression. I wish to ask him about the stability of the spine as I am sure that we all agree that the anterior approach, especially in flexion injuries of the cervical spine is a spine splitting approach; and I believe that Cloward approaches the spine first posteriorly and then approaches it from the front for stabilisation. I would ask if you would agree that typical root pain is very rare from a cervical spine injury.

DR AHMED. In Poland, there are many traumatic cases such as falling from a horse, mainly in the villages. Regarding the anterior approach, Dr Kiwerski said that he does this because the main decompression is required from the anterior aspect.

DR MEINECKE (*Germany*). Dr Silver, can you clarify the situation concerning a minor accident affecting the spine, particularly the cervical spine that may lead to sacral spinal stenosis; if this is correct, there may be some influence on insurance legislation. In my experience of over 25 years with many spinal injury patients, I have never heard about late spinal sacral stenosis.

DR SILVER (*U.K.*). The measurements were made exclusively on the initial X-rays; if measurements were made on later X-rays we know that degenerative changes can take place as a result of injury and abnormal movements. To clarify another point, the reason why I think there was 75 or 85 extension injuries, *i.e.* patients with tetraplegia without bony injury, and yet we only presented data on a smaller number, was because the initial X-rays dated from patients injured in 1944, and the study was done in 1967. Some of the early X-rays were missing, so data was only presented on a small number of the 75 patients.

DR CHAWLA (*U.K.*). When we talk of lumbar stenosis are we referring to a generalised lumbar canal stenosis or are we considering a single level stenosis with a disc or a

malignant lesion. I think we must really define the term, when we talk about 'lumbar stenosis'; I always understood that lumbar canal stenosis was that as described by Mr Cast: multi-level with the lumbar canal being narrow all the way down. This requires a total laminectomy.

MR CAST (*U.K.*). I think the problem defining lumbar canal stenosis had been one that has beset many of us for a long time, and I think one has got to differentiate between a developmental *i.e.* a congenital narrow canal and one that is acquired by pathological changes, such as osteoarthritis, disc disease, tumour or other diseases. We have tried to present cases where there is basically a developmental stenosis where secondary changes have occurred to produce symptoms, and as we showed, the stenotic component of the lumbar canal may be multi-segmental, it may be related just to one segment and in some cases it may be confined to just one lateral recess by using the term that has been used before—a superior facet syndrome. If we keep these concepts clear in our minds, and work from there, we can appreciate the issue of stenotic conditions arising in a previously normal canal, resulting from pathological change, be it spondylotic or tumour.

MR HARRIS (*U.K.*). I agree with Ian Cast—he has given a good working hypothesis. After all, stenosis simply means narrowing and if we think about 'disc protrusion', any spinal canal can be stenotic and the term becomes meaningless.

DR POOLE (*Holland*). I was wondering, what is a good result, who is to judge a good result? The patient or the doctor, or from the X-ray appearances? We have heard about one patient from Scotland who was incontinent, and after the operation became continent. I think that this is a good result.

CHAIRMAN. MR Cast, what is the criteria of recovery, in particular in relationship to neurological deficit before surgery?

MR CAST. I tried to pre-empt this question, Mr Chairman, in my paper, by saying that we all have this problem in deciding on what is a good result; and what is a bad result. One of the major parameters by which we should judge our treatment is—how is the patient afterwards—does he feel better, does he feel the same or does he feel worse? It does not matter so much about the neurological changes, nor about the radiology. If there is pain in the back and bilateral sciatica in a patient who is unable to follow his job, or his hobbies, and as a result of your treatment, you enable him to return to his job and return to his hobbies—that is a good result.

DR GRÜNINGER (*Germany*). We studied the clinical symptoms according to a scoring system published in 1972.

MR MCSWEENEY (*U.K.*). I can sympathise with Dr Silver's difficulty in deciding how many of the cervical canals were congenitally narrow from the start, but which showed none of the normal stigmata of congenital anomalies. It occurred to me that there is such a variation in people's interpretation of the stenotic syndrome. I think the hallmark of stenosis is the triangular shape mentioned by Mr Cast. The difficulty is that his X-rays really only measure the AP diameter, they do not really give us an idea of the volume content of the narrowing. My experience of stenosis in the elderly warranting laminectomy at the appropriate levels has been an entirely satisfactory and most gratifying procedure.

What do you do for a symptomless atlanto-axial dislocation in a rheumatoid patient who is otherwise fairly well?

DR ARALUZE. The first thing is to advise the patient that if he is going to have any dental examination and anaesthetic or other such procedure, he should warn the doctor of his condition, otherwise, no special precaution will be taken. Neck collars for disorders at this level are useless.

DR SILVER. You make the point that the series that McMillan and I looked at were rather different to all the other patients. These were acute admissions to the spinal unit with so-called tetraplegia without bony injury. They did not have a slowly progressive history of tetraplegia or of the other symptoms that have been described; these were acute traumatic admissions and the finding of the stenosis by the technique described was really an incidental finding, which I think is rather different from the other types described by those presenting papers.

CHAIRMAN. Mr Cast—what were the most significant symptoms or signs that you found in your differential diagnosis of your three clinical groups?

MR CAST. The common symptom, of course, was neurogenic claudication. The major differential symptom in patients with spondylosis and a disc lesion associated with their congenital canal stenosis was the presence of back pain and significant unilateral or bilateral sciatica.

CHAIRMAN. Recently I heard a paper by an American radiologist on the pathology of stenosis in which he showed the significance of the proper use of the CAT scanner.