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SPINAL CORD COMPRESSION CAUSED BY A PROTRUDED THORACIC DISC.

Report of a case treated with antero-lateral fenestration of the disc

By

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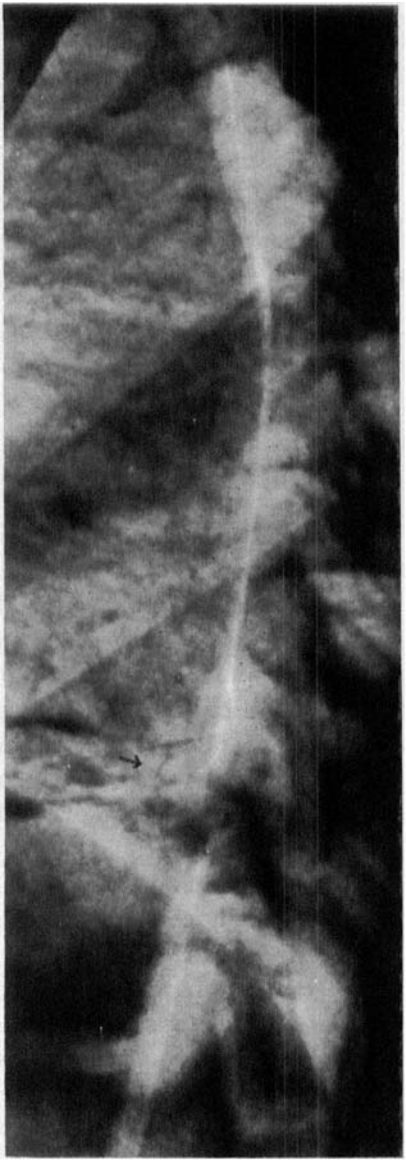
Nerve root compression arising from protruded intervertebral discs is more common than compression of the spinal cord due to this cause. When it occurs, however, its treatment may involve serious surgical problems. The ordinary operative approach to a disc protrusion from the dorsal side through a laminectomy or hemilaminectomy is a far more delicate affair when the spinal cord has to be handled. Operative damage is then much more likely to occur since the spinal cord is much more vulnerable than the nerve roots. Surgical intervention which would produce decompression without further damaging the compressed cord is obviously desirable.

Such a method has been developed and studied extensively in dogs, a species in which disc protrusions are common. (Olsson, 1950, 51, 57, 58, Hansen & Olsson 1952–53).

When pressure is applied to a protruded disc the protrusion will take up part of the pressure through the rupture and will tend to enlarge. In this way compression myelitis, responsible for the acute symptoms, occurs. In the dog this dynamic factor is of great significance in the production of clinical signs in spinal cord compression. A static compression is, on the other hand, well tolerated up to a certain point.

Spontaneous recovery, which is often encountered in the dog even in cases of severe compression, is due mainly to the disappearance of the inflammatory reaction. This may occur in two ways. The disc protrusion may reach a final stage, i.e. complete prolapse of loose masses. If the disc protrusion has already reached its final stage and the damage to the cord still is reversible, then recovery will take place. The other



Jan. 23, 1958. Myelography.

Jan. 23, 1958. Before operation.

May 16, 1958. After operation.

Figs. 1–3.
Myelography and plain roentgenogram before operation, and plain film after operation.

mechanism is by encapsulation of the protruded tissue. This way of stabilising the protrusion, however, may not prevent relapses, for there may still be loose tissue in the disc which can break through.

With this in mind, it has been considered adequate not to remove the protrusion but to evacuate the remainder of the degenerated centre of the disc. This is done through an incision in the annulus fibrosus outside the vertebral canal. This operation, called fenestration and primarily suggested by Lindblom in 1941, (1950) removes all the loose masses in the disc so that no increase in the size of the disc protrusion takes place when pressure is appelled to the disc. In the dog this type of operation has proved to be a simple and effective method of treatment with very little risk of damaging the spinal cord.

In man retroperitonal lumbar disc fenestration was used in cases of long standing lumbago-sciatica by Hult in 1951. The results were difficult to evaluate and for a time the method was given up. However, encouraged by the excellent results in dogs the method was used later on in cases of nerve root compression caused by ruptured cervical discs. In this region the approach was simple and the results of the fenestration were more promising (Hult, 1958).

We have not found any report in the literature concerning the use of disc fenestration in man when a protrusion has caused compression of the spinal cord. We therefore have considered it of interst to report such a case. (Nbi 2731/49; K.S.Th.Kir. 220215).

Case report: A woman of 36, suffered during summer and fall 1957 from low back pain radiating down the posterior aspect of her left thigh. The straight leg raising test was positive. There were no neurologic signs. She was treated with physiotherapy and a back support and improved. Then in Dec. 1957 rather suddenly she developed spastic paresis of her legs. She had numbness and weakness of feet and legs. She was unable to walk without support and had difficulties in starting urination. She complained of pains in the lumbar region radiating down the inner aspects of her thighs and knees. There was slight stiffness of the back but no tenderness. The straight leg raising test was negative. She had moderate loss of power in both lower limbs, more on the right; the weakness of dorsiflexion and pronation of the right foot was pronounced. The knee and ankle jerk were both exaggerated and patellar clonus was elicited on the right. The plantar reflexes were bilaterally extensor. There was loss of appreciation of pain and touch up to the umbilical level.

Röntgen examination on July 12, 1957 revealed calcification of the

disc between Th 10–11 with part of the calcification protruding into the spinal canal. Myelography with oxygen on January 23, 1958 demonstrated an anterior compression of the spinal cord at the level of Th. 10–11.

Fenestration of the disc Th 10–11 by a transthoracic anterolateral approach was performed on March 7, 1958. Following thoracotomy on the right side the affected disc was localized with the aid of röntgen examination. A 2½ cm long and 3 mm broad incision was made in the annulus fibrosus and the opening widened by excision of the bony margins to allow the insertion of a curette. When the inner layer of annulus fibrosus was incised a white creamy mass exuded through the gap and still more was curetted from the disc centre. Curettage of the posterior part of the disc and the prolapse itself was not carried out in order to avoid damaging.

The patient rapidly recovered. The second day after operation her ability to start micturition became normal. The sensory and motor-function of her legs improved and within three weeks the paresis had completely gone. Röntgen examination on May 16, 1958 demonstrated that there was less calcification within the disc as well as in the protrusion. Because of lack of symptoms, myelography was not repeated.

CONCLUSION

The case reported demonstrates that disc fenestration is probably as feasible and successful in man as in dogs in cases of disc protrusions compressing the spinal cord.

SUMMARY

A case of herniated thoracic disc with spinal cord compression causing paresis of the legs was treated by antero-lateral disc fenestration with the disappearance of symptoms and signs.

RESUME

Un cas d'hernis discale avec compression spinale causant la parésis des jambes a été traité par fénestration discale antéro-latérale avec disparition des symptômes et des signes de la maladie.

ZUSAMMENFASSUNG

Ein Fall von Zwischenwirbelscheibenvorfall, der zur Parese der Beine führte, wurde mittels anerolateraler Diskusfenestration behan-

delt worauf die objektiven und subjektiven Krankheitserscheinungen verschwanden.

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