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SCIATICA.

By G. A. GIBSON, M.D., D.Sc., F.R.C.P. Ed.

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NOTE ON THE CREMASTERIC REFLEX IN SCIATICA.

By G. A. GIBSON, M.D., D.Sc., F.R.C.P.Ed., *Physician to the
Royal Infirmary, Edinburgh.*

A REMARKABLE exaggeration of the cremasteric reflex, in cases of sciatica, has lately forced itself upon my attention. This symptom has shown itself in every instance of the affection that has recently been under my notice. It has been present, not only in the more serious types of disease—attended by wasting of muscles and disturbance of electric reactions—which are certainly of neuritic origin, but also in the less grave varieties—not accompanied by muscular wasting and changes in electric responses—which may possibly be purely neuralgic.

The reflex in these cases can be elicited in the ordinary way by gently stroking the skin on the inner side of the thigh; it is, however, much more easily produced by firm pressure over the lower and inner portion of Scarpa's triangle, whose sensory nerve supply is derived from the internal cutaneous branch of the anterior crural nerve. In cases of unilateral sciatica, pressure in this region on the unaffected side produces the ordinary slight cremasteric contraction, while an equal stimulus applied to a corresponding point of the affected limb gives rise to a greatly exaggerated response on the side of the lesion. In some cases this is followed, slightly later, by a less distinct contraction on the opposite and unaffected side.

It is of great interest to find that this exaggeration of the cremasteric reflex occurs in cases which do not manifest much increase in the knee-jerk, as well as in others with great augmentation of the myotatic irritability. So far as my observations go, it seems to me that the extent of the cremasteric reflex is, as might be expected, greatest when the knee-jerk is much exaggerated, yet the increase of the cremasteric response is more constant than that of the knee-jerk. Whether this cremasteric response bears any relation to the extent of the plantar and gluteal reflexes, is a matter which has also engaged my serious attention. In some instances all three reflexes have been exaggerated almost to the same extent; in others, while the cremasteric response was very strongly in evidence, the plantar and gluteal reflexes were scarcely obtainable. It has never in my experience been associated with the symptom of dorsiflexion of the toes on stimulation of the sole of the foot.

Whether any explanation of the symptom can be discovered, is a point worthy of discussion. The afferent segment of the reflex arc is the internal cutaneous branch of the anterior crural nerve, which arises from the second, third, and fourth lumbar segments of the cord. The efferent tract is the genito-crural nerve, which has its origin in the first and second lumbar segments. The

cremasteric reflex centre is usually held to be situated in the second lumbar segment. The great sciatic nerve has its origin in the lumbo-sacral cord, arising from the fourth and fifth lumbar segments, as well as in the roots of the first, second, and third sacral segments. It therefore follows that there is no direct connection between the great sciatic nerve, on the one hand, and the genito-crural nerve on the other, such as is undoubtedly present in the case of the anterior crural and genito-crural nerves. The conclusion seems therefore to be inevitable, that in sciatica the segments of the cord above the level of the lumbo-sacral cord are in a condition of excessive irritability. It is a matter of real interest in this connection to observe that in sciatica there is an interesting analogy between the superficial reflexes and the tendon responses. It has been stated above, that the plantar and gluteal reflexes are not so constantly exaggerated as the cremasteric. A similar relation obtains between the tendon phenomena of ankle and knee—the ankle-jerk being much less frequently increased than the knee-jerk, while ankle-clonus also is far from common. Now the plantar centre is situated in the second sacral, and the gluteal in the fourth and fifth lumbar, segments, while the cremasteric is in the second lumbar segment; similarly the ankle centre is in the first, second, and third sacral segments, while the knee centre is in the second lumbar region. Anatomically, therefore, the cremasteric centre and the knee centre are situated above the connections of the sciatic nerve; it therefore seems probable that in sciatica the segments of the cord at and below these sciatic connections have but little tendency to exaggeration, while those above are in a condition of exaltation.



