NERVE COMPRESSION DUE TO AN ABNORMAL MUSCLE

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INTRODUCTION

An interesting, unusual muscle which has not been mentioned in any current textbook of Anatomy, was accidently found in the students' dissection in one Indian male.

MATERIALS AND FINDINGS

A muscle, 7.5 c.m. long and 1.4 c.m. wide at its thickest part lay just inferior to the piriformis muscle on both sides of the lower limb. It was not part of the piriformis muscle as it originated from the lower margin of the greater sciatic notch and inserted into the greater trochanter of femur just posterior to the piriformis. (Piriformis muscle originated from the pelvis surface of the 2nd, 3rd and 4th sacral pedicles).

On the right side, both the common peroneal division and the tibial division of the sciatic nerve were placed anterior to this abnormal muscle (Figs. 1A, 1B), whereas on the left side only the tibial division remained anteriorly but the common peroneal division was situated posterior to this muscle together with the posterior cutaneous nerve of the thigh by passing over the muscle (Figs. 2A, 2B). (The tibial and the common peroneal divisions later fused again and formed the sciatic nerve at the middle part of the thigh). The common peroneal division of the sciatic nerve was seen tightly bound by the piriformis superiorly and this extra muscle inferiorly on the left side. Thus, part of this nerve which was just under the piriformis muscle was compressed (Arrows in Fig. 2A).

The author had made an attempt to see other such cases in the remaining limited number of cadavers available in the dissection room. This was, however found to be the only one. No such report was also given in other primates (Hill, 1953).

DISCUSSION

There are various causes of nerve compression syndrome; subsequent to dislocation of the joints, fracture of the bone, arthritis, fibrous tunnel arch and due to the abnormal relation of the muscle to the nerve. However, nerve compression due to the presence of the abnormal muscle was not seen in the available literature especially in the gluteal region.

Robinson (1947) mentioned the piriformis syndrome due to the abnormal relation of the

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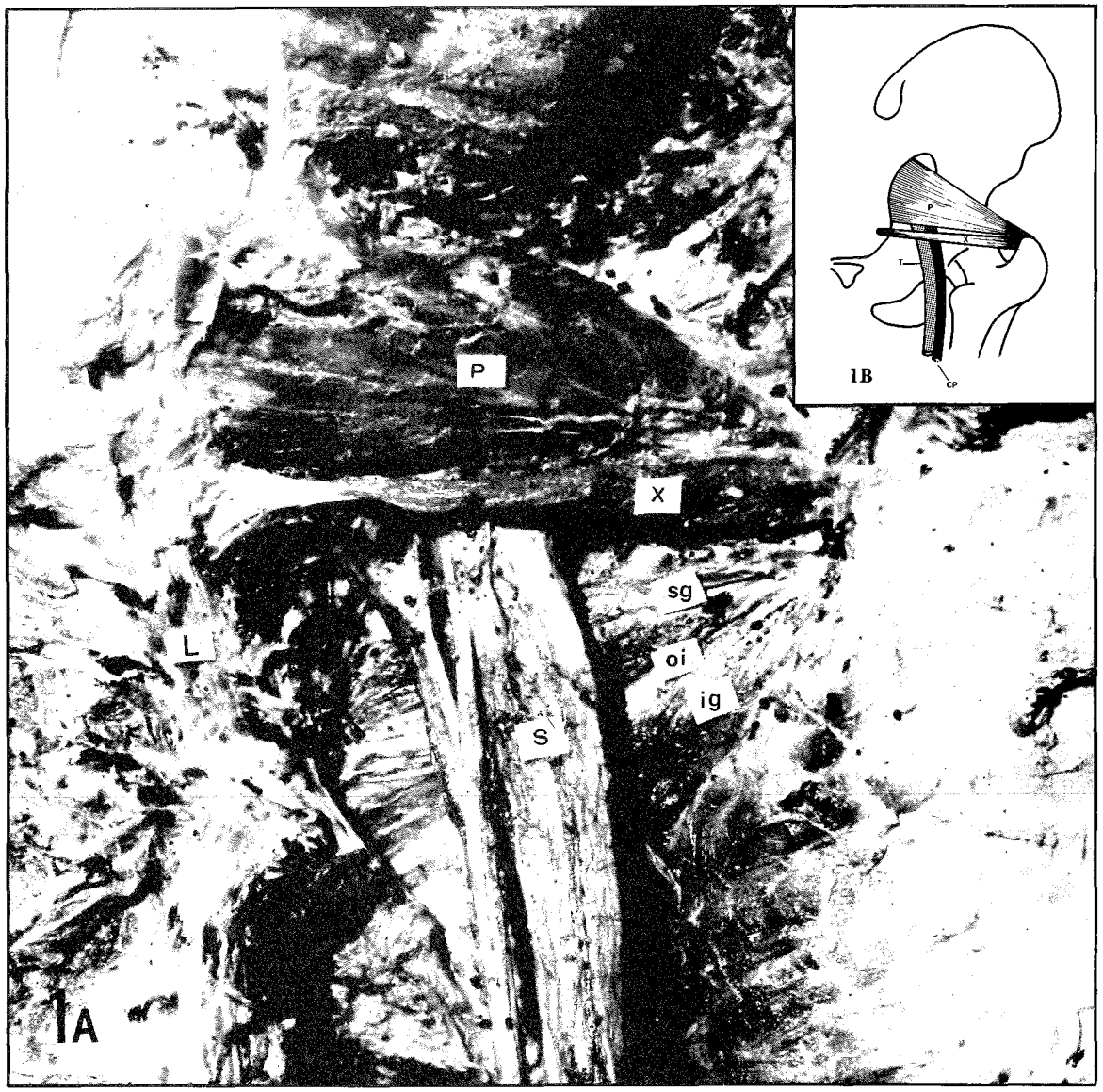

Fig. 1.A,B Right gluteal region, after removal of the gluteus maximus muscle showing piriformis muscle (P); unusual extra muscle (X); sciatic nerve (S); superior gemellus muscle (sg); obturator internus muscle (oi); inferior gemellus muscle (ig) and part of sacrotuberous ligament (L).

muscle to the sciatic nerve. He stressed that if the sciatic nerve as a whole or a portion of it (peroneal or tibial) passed through the piriformis muscle, sciatic pain could arise as the result of the pressure by this muscle on the nerve on stretching, spasm or inflammation of the muscle. Hollinshead (1961) and Warwick and Williams (1973) also stated that the piriformis muscle is frequently pierced by the common peroneal division of the sciatic nerve. Yoemans in 1928 was the first to refer to the piriformis muscle in relation to the sciatic pain. He stated that any lesion of the sacro iliac joint might cause inflammatory reaction of the piriformis muscle and its fascia. One of the cardinal features of the piriformis syndrome is the history of trauma to the sacro iliac and gluteal region (Robinson 1947). As the gluteus muscle overlies the piriformis muscle directly, Robinson noted that any compression or injury to the former may affect the underlying muscles. If such is the postulation then, this unusual muscle in this case may invariably be affected in similar conditions.

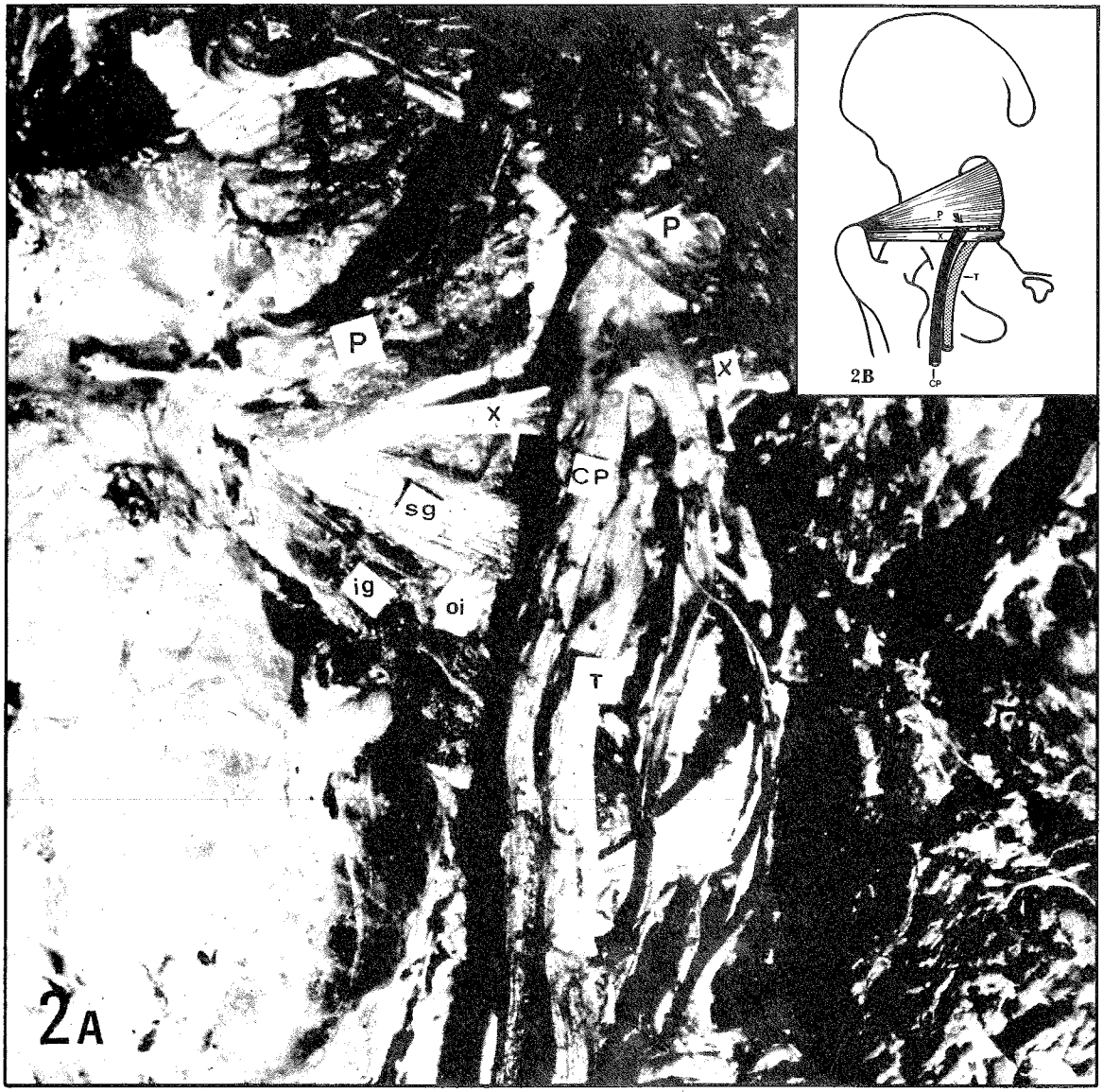

Fig. 2.A,B Left gluteal region, after removal of the gluteus maximus muscle showing piriformis muscle (P), which is cut and reflected to show the compressed part (arrows) of the common peroneal nerve (CP), lying between the piriformis above and extra unusual muscle (X) below.
Tibial division of the sciatic nerve (T); superior gemellus muscle (sg); obturator internus muscle (oi) and inferior gemellus (ig).

In view of the theories postulated by Yoemans and Robinson, and bearing in mind that the peroneal division of the left sciatic nerve was tightly sandwiched and compressed in between the piriformis superiorly and the unusual muscle inferiorly in this case, is it possible that these two muscles together could induce such a syndrome as seen in the piriformis syndrome?

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