

TWELFTH-RIB SYNDROME SIMULATING INTRA-ABDOMINAL DISEASE

Case Report

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Abstract. A remarkable syndrome of bilateral intercostal neuralgia with pain in the loin, lower abdomen, groin and thigh was cured by resection of the 11th and 12th ribs. The pathways for the pain referral are discussed. The syndrome should be considered in the differential diagnosis of chronic abdominal pain.

Key words: intercostal neuralgia, chronic abdominal pain, differential diagnosis.

The slipping rib syndrome (1), with upper abdominal pain caused by interaction of the mobile tips of the 8-10th ribs, is widely recognized as a cause of upper abdominal pain. In connection with a recent review (2) of earlier reports (3, 4) on an unusual type of chronic intercostal neuralgic pain in the loin radiating towards the groin, four unilateral cases were presented. Three of these patients had been referred for investigation of presumed renal pain. The syndrome causes marked inconvenience and the symptoms vary in frequency, strength and duration. The pain can be reproduced by manipulation of the 11th and 12th ribs or evoked by certain movements or positions. Immediate relief is obtained by excision of the lowest rib(s).

We present a patient who initially underwent extensive investigation at gastroenterologic and urologic units because of a bilateral syndrome closely resembling previously reported cases (2), except that the pain was referred not only to the groin, but also to the back and the upper part of the lower limb.

CASE REPORTS

A 48-year-old man had a 3-year history of intermittent pain in the right loin, radiating to the right side of the abdomen, the back, the right groin and the thigh. The pain was aggravated by certain activities such as bending, lifting, sitting and driving a tractor. There was no history of trauma. Extensive investigations by gastroenterologists and urologists had given no result.

Radiograms of the spine and ribs were normal, as were bone scans. Serum calcium and phosphorus were within normal range. Clinical examination revealed hypersensitivity in the subcostal area. Manipulation of the tip of the 12th right rib exactly reproduced the pain. Blockade of the 11th and 12th intercostal nerves gave relief for 2 days. Orthopaedic examination of the back and lower limbs revealed nothing abnormal.

Subperiosteal resection of the right 11th and 12th ribs (July 1985) gave immediate relief from the pain. Three months later similar symptoms arose on the left side, but immediately responded to subsequent excision of the left 11th and 12th ribs. The patient has been pain-free during the 22 months since this second operation.

CONCLUSIONS

A question raised by such cases is why pain that can be relieved by rib resection occurs concomitantly in the loin, lower abdomen and thigh. The answer must lie in some involvement of at least the 12th intercostal nerve.

Of all the intercostal nerves, only the 12th is anatomically more or less connected to the massive lumbar plexus via nerve fibres. Primarily the lateral and dorsal branches of this nerve distribute neuralgic pain to the loin, while the lumbar plexus is responsible for innervation of the lower central body wall and the groin (iliohypogastric and ilioinguinal nerves) and the thigh (lateral cutaneous and posterior cutaneous femoral nerves, anterior cutaneous branches of the femoral nerve, and obturator nerve). This neuroanatomic pattern (Fig. 1a-c) may well explain the somewhat confusing distribution of symptoms originating in the distal intercostal region.

The most quoted of the multiple symptoms of the 12th-rib syndrome seems to be lower abdominal pain, since the patients then tend to be submitted to urologic investigation. The syndrome should be considered if the abdominal pain is associated with atypical pains referred to the groin and, as in the present

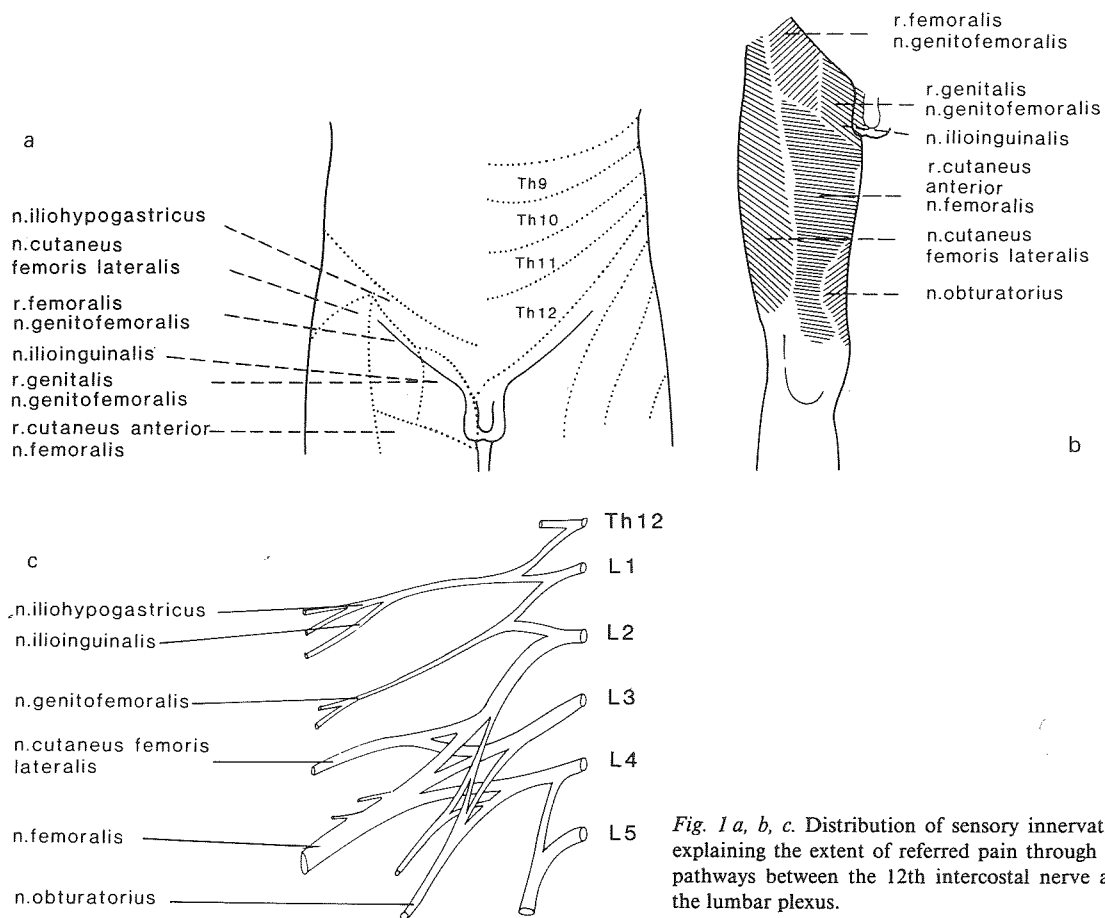


Fig. 1 a, b, c. Distribution of sensory innervation explaining the extent of referred pain through the pathways between the 12th intercostal nerve and the lumbar plexus.

case, to the back and lower limb. The diagnostic hallmarks are nevertheless the loin pain and the reproducibility of symptoms by manipulation of the tip of the 12th rib. The syndrome may be fairly common (2), and is worth learning to recognize in order to avoid unnecessary investigations and possibly inappropriate treatment. Subperiosteal resection of the 11th and 12th ribs is a minor procedure, which has proved to be curative.

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