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TRIGGER POINT INJECTION OF LOCAL ANAESTHETIC FOR TREATMENT OF ABDOMINAL CUTANEOUS NERVE ENTRAPMENT SYNDROME

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ABSTRACT

Abdominal cutaneous nerve entrapment syndrome(ACNES) can be acute or chronic. It is often misdiagnosed as irritable bowel, spastic colon, gastritis, psychoneurosis, depression, anxiety, hysteria, and malingering. Appropriate treatment by infiltration of local anaesthetic either alone or in combination with alcohol/corticosteroids can avoid multiple unnecessary complementary investigations and wrongful diagnosis.

KEYWORDS: ACNES, Valleix, Lidocaine, Trigger Point, Abdominal Pain.

INTRODUCTION

As stated by Kopell and Thompson,[1] the nerve entrapment can occur at sites where it changes direction to enter a fibrous or osseofibrous tunnel or passes over a fibrous or muscular band. Muscle contraction adds to the nerve irritation and localized swelling can injure the nerve directly or compromise the nerve's circulation. Valleix phenomenon occurs which determines that tenderness of the involved nerve trunk may be found proximal or distal to the affected portion. The most common cause of abdominal wall pain is nerve entrapment at the lateral border of the rectus muscle. Conditions increasing intra-abdominal pressure, any scar[2,3,4] or excessive use of abdominal muscles can cause the neurovascular bundle to herniate through the fibrous ring and aponeurotic opening which are present laterally to the rectus muscle. The anterior branches are more likely to be affected than posterior or lateral branches. ACNES (Abdominal Cutaneous Nerve Entrapment Syndrome) pain can be acute or chronic. The acute pain is described as localized, dull, or burning, with a sharp component (usually on one side) radiating horizontally in the upper half of the abdomen and obliquely downward in the lower abdomen, thereby mimicking ovarian, renal or bladder pain. The most common reason of young patients visiting the clinic is the concern of any gonadal pathology.[2,3,5,6] Sometimes these patients come with complaints of ulcer, hernia or history of multiple abdominal surgeries(surgical scars) or multiple normal investigations. ACNES-related pain is well localized and usually affects only one side. However, the pain can occur on both sides at the same level (usually in the lower abdomen), or more than one nerve can be affected on opposite sides and at different levels. Pain radiating from T11 and T12 runs at an oblique angle and suggest urolithiasis, T11 pain on the right side indicates appendicitis, and involvement on either side may suggest ovarian involvement or spigelian hernia. Pain on the right side at the T8 or T9 level suggests cholecystitis or peptic ulcer. Pain at the T6, T7, or T8 levels can suggest pleurisy, costochondritis, or slipping rib syndrome. Pain and numbness laterally in the thigh and hip may be caused by meralgia paresthetica.[1] Chronic ACNES patients may also be given psychiatric medications as the cause of pain is undetectable and normal investigations. A properly administered local anaesthetic injection completely relieves the pain of ACNES and is critical for both diagnosis and treatment.

CASE REPORT

We presented the case of a 57-year-old man, with a history of pain epigastrium since 6 months, unrelated to eating, which increased with exercise. On examination, there was increased pain at the tip of the finger on deep palpation of the left lateral border of the rectus muscle at the level of T6/T7 approximately. Laboratory tests with routine investigations like complete blood count, liver function tests, renal function tests, lipid profile, random blood glucose, endoscopy, abdominal ultrasound, and abdominal contrast enhanced computed tomography were done with normal results. Treatment with tablets ofloxacin and ornidazole, drotaverine, hyoscine and pantoprazole was given and ACNES was suspected. Hence, the patient was given an injection of 1 mL of a 2% lignocaine with a 22 Gauge needle at the trigger point (T6/T7) in the standing and bearing down position(for best feel of landmarks). As the needle was introduced, the resistance was felt at the skin, subcutaneous tissue, aponeurosis and fatty plug. The needle should not be introduced deeper than this level as

it may cause ecchymosis. The patient was asked not to breathe during aspiration and injection. A patient who feels faint after receiving the injection should be allowed to lie down until he feels better; otherwise, the patient should be encouraged to move about the room. Our patient instantly obtained complete relief of the abdominal pain. This procedure diagnosed and treated the ACNES completely. But if any patient doesn't get relieved, then second injection may be attempted after about ten minutes or on another day. Then our patient came after a month for routine check up, where he showed no symptom of ACNES pain again.

DISCUSSION

In 1792, J P Frank described the ACNES as "peritonitis muscularis,"[7] whereas number of articles suggest that the pain abdomen of ACNES has been incorrectly referred to intra-abdominal disorders and thereby unnecessary consultation, testing, and even abdominal surgery. Another study of 117 patients by Greenbaum in 1999,[8] they estimated that $914 per patient had been expended on wrong diagnosis and treatment. Similar study was done in 2001 by Thompson et al[9] in which they concluded an enormous average of $6727 per patient. Hershfield[10] in another similar study founded that these patients came with an initial diagnosis of irritable bowel, spastic colon, gastritis, psychoneurosis, depression, anxiety, hysteria, and malingering. Whereas many studies concluded nerve entrapment at the lateral border of the rectus abdominis muscle as the most common cause of abdominal wall pain.[11,12,13,14,15]

Mehta and McGrady used a Teflon-coated needle with exposed tip to locate the nerve by electrical stimulation, but the procedure was cumbersome and time-consuming.[16,3] For nerve entrapment under the aponeurosis, injection of 1 ml of 5%-7% of phenol or absolute alcohol was also tried but pain and systemic effects of alcohol occurred frequently.[16,15,3] Instead, 2% lidocaine solution achieves immediate relief with great result with minimal local pain and burning sensation. Hence, it also helps in deciding the correct position of needle. This treatment achieves pain remission in between 38% and 87% of cases.[17] Some investigators have recommended use of corticosteroid drugs into muscles, but it can cause considerable pain, and tissue atrophy on repeated injections.[15,18,19,20] Other treatment modalities like application of ice cube or elastic bandage may temporarily relieve pain of ACNES. Heat applications may relieve associated muscle spasm. In patients with recurrent pain even after three injections of local anaesthetic plus corticosteroids in the same location in a year, anterior neurectomy should be done.[21]

General physicians play an important role as they are the first physicians to see the patient. Patients with long-standing abdominal pain, not subsiding with usual analgesics should raise the suspicion of ACNES. Proper history and physical examination can save many unnecessary investigations and help in proper diagnosis and treatment of ACNES.

CONCLUSION

ACNES is one of the leading cause of abdominal pain and the prevalence ranges from 15-30%. But without proper knowledge of ACNES amongst doctors, this condition is usually misdiagnosed. Appropriate treatment by infiltration of local anaesthetic either alone or in combination with alcohol/corticosteroids can avoid multiple unnecessary complementary tests and referral to various specialists.

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