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INVITED COMMENTARY

Classifying Postherniorrhaphy Pain Syndromes Following Elective Inguinal Hernia Repair

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Persistent postoperative pain (allodynia, hyperalgesia) should disappear 3 months after surgery, when complete tissue healing has taken place. Postoperative pain that persists after this time is classified as chronic pain. Chronic pain is a serious clinical problem that leads to depression in 49% of sufferers, time off work in nearly one-half, and permanent loss of work in one-fourth. The World Health Organization (WHO) has recognized that pain treatment is a human right [1]. The management of postherniorrhaphy chronic pain is not well organized because the basic causes are poorly understood. Uniform assessments that could lead to well defined management protocols are not available, nor are well defined criteria available for pain characteristics and neurophysiologic sensory disturbances [2]. Although there is extensive literature on chronic pain after hernia surgery, a lack of uniformity for classifying the condition has resulted in confusion over the basic principles of treatment [3]. For these reasons, the study by Loos and colleagues is an important contribution to the hernia literature.

There is a wide variation in the use of descriptors for ''chronic groin pain.'' When described as ''any pain or discomfort that has been experienced by the patient in relation to their hernia repair at a time point after the original operation,'' an incidence of up to 38% has been reported [4]. When the pain is classified by severity, 3% to 4% of patients report severe chronic pain that affects daily activities, such as walking, work, sleep, relationships with other people, mood, and general enjoyment of life [5]. The incidence does not differ between patients undergoing mesh or nonmesh repair or by whether the operation was carried out by the open approach or the laparoscopic approach [6, 7].

Although mesh is not a major causative factor for severe postherniorrhaphy groin pain, investigators have attempted to show that lightweight meshes may reduce the incidence of other abnormal sensations in the groin affecting quality of life. Post and colleagues, although finding no severe pain at 6 months in 122 patients, noted that more patients had feelings of a foreign body in the groin with a heavyweight mesh and a very small number of patients had pain on exercise with heavyweight mesh [8]. O'Dwyer and colleagues also found no difference in severe pain between heavyweight and lightweight mesh; however, they did find a higher incidence of mild pain with heavyweight mesh and an increased incidence of recurrence with lightweight mesh [9]. Bringman and colleagues have reported 1-year and 3-year results in a cohort of 600 patients randomized to lightweight or heavyweight mesh for primary groin hernia repair [10, 11]. No differences were found in response to a pain questionnaire, daily activities, exercise, or analgesic consumption, but the patients with lightweight mesh had less pain on examination and when rising from lying to sitting, and they felt discomfort in the region of the mesh less often. Lightweight meshes do not affect the incidence of severe chronic groin pain but may have some beneficial effect in reducing discomfort during physical exercise. Weyhe et al. concluded that it is questionable whether lightweight meshes are associated with improved postoperative outcome for groin hernia surgery, noting that lightweight meshes had some advantages with respect to foreign body sensation, but their use is associated with increased recurrence rates [12].

Loos and colleagues suggested a realistic classification for the mechanisms involved in the development of postherniorrhaphy groin pain and identified neuropathic pain

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arising from nerve damage as the principal underlying cause. A systematic review by Wijsmuller and colleagues identified five relevant studies concerning nerve handling during open groin hernia repair [13]. Three of the studies were randomized controlled trials concerning preservation or division of the ilioinguinal nerve during open operation and demonstrated no difference between the two groups. In another two cohort studies there were better outcomes in terms of postoperative pain in patients in whom the three sensory nerves had been specifically identified and preserved. It can be concluded that nerves are most often injured when the surgeon is unaware of their location and fails to recognize them during surgery. Group III described by Loos et al. could arise from damage to the vas deferens or spermatic vessels, but the experimental and clinical evidence is unconvincing [14–19].

Possible treatments for postherniorrhaphy groin pain will be greatly facilitated by the classification system described by Loos and colleagues. Current treatments are limited and consist of either mesh or staple removal or neurectomy [20]. Aasvang and Kehlet concluded that there is insufficient information available at present on the effect of removing the mesh or staples [20]. Neurectomy is not widely practiced (and would be an impractical solution for the 15,000 sufferers being afflicted annually in the United States), although Amid reported excellent results for one-stage triple neurectomy and proximal end implantation without mobilizing the cord [21].

Many factors are involved in the development of chronic postherniorrhaphy pain, including the influence of the quality of preoperative information given to patients, premedication, perioperative pain control, anesthetic technique, management during the surgical journey, and the magnitude and conduct of the operation. A team approach involving the surgeon, anesthesiologist, and nurse optimizes these factors and may explain why specialized hernia treatment centers report a low incidence of chronic groin pain.

Strategies for the future must adopt an evidence-based pharmacologic approach. This may involve better acute pain treatment using ketamine to prevent triggering chronic irreversible neurochemical changes [22]. Alternatively, clinical trials should investigate the treatment of stratified groups of patients (according to the new classification of Loos et al.) with established chronic groin pain to investigate the benefit of tricyclic antidepressants, antiepileptics, transcutaneous nerve stimulation, or newer tailored drugs.

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