



Mesh Inguinodynia: A follow up study of three stitch meshplasty

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ABSTRACT

Background: Patients undergoing inguinal hernia surgery commonly undergoing Lichtenstein meshplasty are common sufferers of chronic inguinal pain. This inguinodynia can be due neuropraxia or neurotmesis of the nerves in the inguinal canal. The second cause is fibrosis related to mesh which may lead to narrowing of the internal ring.

There can be non neurogenic cause also in some patients. Treatment with analgesics and neuromodulators is effective in most of patients. Mesh removal and neurectomy is advised in those patients who are not cured with analgesics and nerve block even after one year post operative.

Material and method: Four hundred patients operated for inguinal hernia were followed in surgical out door. A modified Lichtenstein tension free repair was done using polypropylene mesh. Patients were followed up for inguinal pain at 1 week, 4 weeks and 3 months duration. A total for 15 patients suffered from inguinal pain at 3 months duration. Only five patients were considered for exploration. All these patients mesh was removed along with neurectomy by open surgery technique.

Results: At 1 week follow up these patients had mild to moderate pain. Follow up at 3 weeks sixty patients had some pain. Out of these sixty patients, forty five had pain relief with drugs at the end of 3 month follow up. Symptoms persisted in rest of fifteen patients. Ten of the patients had relief of inguinodynia. The remaining 5 patients were further followed. At end of one year, on exploration mesh was removed in these patients along with neurectomy. All the patients had satisfactory results.

Conclusion: Nerve block can relieve inguinodynia but mesh removal combined with neurectomy will cure this mesh inguinodynia.

KEYWORDS : Mesh Inguinodynia, Lichtenstein repair, Inguinodynia, Groin pain

Introduction:

Now a day's tension free repair is common for inguinal hernia repair. Chronic inguinodynia or neuralgia after meshplasty is a rare complication but does occur. It is a neuropathic pain which occurs in the distribution of the nerve involved. The nerve can get injured during surgery. The character of pain in inguinodynia is either stabbing or burning. This pain can also be somatic in origin due to chronic inflammation at the site of hernia repair. The character of this somatic pain is continuous dull ache. Another type of pain is visceral pain which manifests as orchalgia and ejaculatory pain. This is considered due growth of fibrous tissue into spermatic cord.¹

The increase in popularity of prosthetic mesh repair (tension free, plug or laparoscopic repair) has given a new entity called mesh inguinodynia. This chronic pain occurs after meshplasty in 1-2% of these patients. This chronic pain is primary symptom while secondary symptoms are numbness and sensory loss.² Mesh inguinodynia is caused by entrapment of ilioinguinal nerve or development of fibrosis. The mesh inguinodynia is debilitating for a few patients with neuralgia, hyperaesthesia and parathesia. The patient may have radiation of pain to hemiscrotum, thigh or back.³ Neuropathic pain is having a trigger point called Tinel's test which produces pain in the distribution of the nerve. This type of pain gets exaggerated by exertion on walking or sitting. On other side, non neuropathic pain is a constant dull ache in inguinal area with no specific trigger point. This pain is aggravated by strenuous exercise. These debilitating symptoms force the patient to restrict physical and social activities, inability to work, psychological and sleep disturbances.⁴ The nerves involved are ilioinguinal nerve, iliohypogastric nerve, genitofemoral nerve. These nerve can be damaged by dissection trauma, fibrosis and suture used to fix the mesh. A neuroma formation due to nerve transection is also responsible cause for pain in the area of the nerve.⁵ Sexual dysfunction like penile pain, erectile dysfunction, and dysejaculation have been reported in inguinodynia.⁶

The management of pain is quite difficult for surgeons. Pain due to neuropraxia usually dies down in about six months.⁷ Hakeem et al have described lifestyle modifications, use of non steroidal anti-inflammatory drugs, local use of counter irritant creams, nerve blocks using alcohol or phenol in treatment of mesh inguinodynia with variable results.⁴ Those patients not responding to these treatments should be subjected to surgical treatment. Removal of mesh alone has not been sufficient. It requires reoperation, mesh removal and neurectomy.⁴

Material and methods:

This study was done on 400 cases of inguinal hernia operated. A mod-

ified Lichtenstein tension free repair was done using polypropylene mesh. The modification used was anchoring of mesh using polypropylene suture by three stitch technique. Patients were followed up for inguinal pain at 1 week, 4 weeks and 3 months duration. Mild pain persisted in most of the patients in 4 weeks and total for 15 patients suffered from inguinal pain at 3 months duration. The antiinflammatory drugs were used on patients. The patients in whom pain couldn't be relieved with anti inflammatory drugs considered for surgery and mesh removal was done. Only five patients were considered for exploration. All these patients mesh was removed along with neurectomy by open surgery technique.

Result:

These four hundred patients were operated for inguinal hernia by open surgical technique. Three stitches anchoring of the mesh, a modification of Lichtenstein tension free mesh repair was done in these patients. All the four hundred patients were treated by this technique. Follow up of these patients was done at 1 week, 1 month and 3 months. These patients were followed in outpatient department. At 1 week follow up these patients had mild to moderate pain. Follow up at 3 weeks sixty patients had pain. They were treated with non steroidal anti-inflammatory drugs. Out of these sixty patients, forty five had pain relief with drugs at the end of 3 month follow up. Symptoms persisted in rest of fifteen patients. These 15 patients were followed further and given nerve block using inj. Bupivacaine thrice at one month interval. Ten of the patients had relief of inguinodynia. The remaining 5 patients were further followed up. They were made to wait for one year post operative by reassurance and medical therapy. The re operation was advised these patients. on exploration mesh was removed in these patients along with neurectomy. On further follow up good results were achieved in all the five patients.

Discussion:

Despite the popularity and good results of prosthetic mesh repair persistent post operative pain in small group of patients. This may become more evident with the rising interest in laparoscopy. Correcting this problem is formidable task.

Diagnosis of mesh inguinodynia is difficult requiring a good clinical examination. Besides clinical examination, ultrasonography must be used as scanning to rule out recurrence. Studies suggest that ilioinguinal nerve mesh entrapment with neuropathological changes that suggest an inflammatory cause for this mesh inguinodynia. Various modalities have been used for treatment of this chronic groin pain. The use of anti-inflammatory drugs, neuromodulators like gabapentene, vit B₁₂ and carbamazepine can treat the inguinodynia.⁴ A few cases may need referral to pain clinic. Relief with nerve block does not

produce favorable outcome.⁸ Use of medical therapy should be continued up to one year as this neurological pain dies down with time.

The operative repair may be considered early only if there is recurrence of hernia. Remedial inguinal exploration and mesh removal with or without neurectomy results in available outcome in 60% patients.⁹ It appears that coincident neurectomy results are better than mesh removal alone. Mesh excision combined with triple neurectomy is said to produce good results.^{10,11} Laparoscopic retroperitoneal triple neurectomy for treatment of inguinodynia is reported to have better success rate than standard open triple neurectomy. This approach permits access proximal to all sites of neuropathy and is considered better than open triple neurectomy. It is a preferred technique for triple neurectomy in absence of recurrence or meshoma for management of chronic inguinal neuralgia.¹²

In our study, all these patients had good results with nerve block. The rest of five patients in which exploration was done with mesh removal and neurectomy had satisfactory relief of pain.

Conclusion:

The contraction of mesh particularly the neo inguinal ring leads to entrapment of ilioinguinal nerve. Local anaesthetic injection can relieve this inguinodynia but with mesh removal constriction at neoinguinal ring gets relieve which leads to cure of mesh inguinodynia. Triple neurectomy combined with mesh removal give better results. The take away message is that remedial inguinal surgery with mesh removal and ilioinguinal neurectomy will cure the patients.

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