



## An Innovative Tehnique for Inguinal Hernia Repair under Local Anesthesia as Ambulatory Surgery

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### ABSTRACT

**Introduction:** *The Lichtenstein technique of meshplasty has pioneered the ambulatory surgery for inguinal hernia repair with standard way of securing the mesh in position on the posterior wall of inguinal canal is with polypropylene sutures.*

**Methods:** *A total of 50 cases were operated under local anaesthesia for inguinal hernia as day surgery or ambulatory surgery with three stitch mesh anchoring technique.*

**Results:** *We observe the mean operative time was 29.3+8.5 minutes. Whereas 70 % were pain free with local anesthesia only. Only 20 % of the patients complained of Post-op pain. Two patients developed hematoma and Seroma. Three patients developed wound site induration and infection. Only one patient stayed for 48 hrs that to due to complications.*

**Conclusion:** *We conclude that three stitch mesh anchoring technique for inguinal hernia repair under local anesthesia is easy to learn and faster with less post-operative complication and early ambulation.*

**Key Words:** *Meshplasty, Ambulatory Surgery, Local Anesthesia, Inguinal Hernia.*

### INTRODUCTION

Surgical correction of inguinal hernias, called a herniorrhaphy or hernioplasty, is now often performed as an ambulatory procedure. The gold standard technique of hernia repair being tension free mesh repair.<sup>1</sup> Even in this laparoscopic era, due to long and complex learning curve of laparoscopic hernia repair, Open Lichtenstein tension free meshplasty is accepted as gold standard in inguinal hernia repair in modern era.

The Lichtenstein technique of meshplasty has pioneered the ambulatory surgery for inguinal hernia repair.<sup>2</sup> The standard way of securing the mesh in position on the posterior wall of inguinal canal is with polypropylene sutures. To save the operative time and proper fixation of the mesh is the main purpose.<sup>3</sup> Garg et al in a comparative study using skin staplers and polypropylene sutures for securing the mesh in the Lichtenstein's tension free inguinal hernia repair observed that

this technique of mesh fixation has added advantage of significant reduction in operative time. This technique of mesh fixation is comparable to use of skin staplers by various authors.<sup>4</sup> Spinal or general anaesthesia is used for meshplasty in inguinal hernia repair. Local anaesthesia using lignocaine is also being used. In other studies also Local anaesthesia is of preferred over spinal or general anaesthesia.<sup>5</sup> Local anaesthesia is not only cost-effective but also produce adequate anaesthesia for inguinal hernia repair. The patient needs short hospital stay and can be discharged within 24 hrs only. This study was done to know the outcome of three stitch meshplasty under local anesthesia in cases of inguinal as an ambulatory surgery procedure.

#### **METHODS AND MATERIAL**

In this total of 50 cases were operated under local anaesthesia as day surgery or ambulatory surgery. Patients with unilateral and bilateral hernia which were non obstructive fully or partially reducible were included in study. Local anaesthesia was used 1% lignocaine without adrenaline. Local anaesthesia was used for ilioinguinal nerve block and local infiltration of skin and subcutaneous tissue. Cord block was given after opening the inguinal canal. After Herniotomy in indirect inguinal hernia and inversion of sac in direct inguinal hernia, three anchoring sutures to fix the mesh were applied. First suture is applied medially near the public tubercle to the inguinal ligament. Second suture is applied medially to the conjoint tendon as now it forms the anterior rectus sheath. Third is applied just lateral to the deep ring after overlapping the two margins of the mesh. The patients were observed in recovery room for pain, haematoma and urinary retention. The patient was allowed orally a cup of tea and biscuits and discharged after three to four hours. In patients with extra ordinary pain, scrotal oedema and hematoma the stay was extended for one day. The patients were discharged to take antibiotics and analgesics as advised. The patients were explained to take rest at home and in case of

any emergency report to the indoor. The patients were followed on weekly basis in outpatient department for three weeks and then at three months interval. In follow up record was kept about pain return to routine activities and early post-operative complications.

#### **RESULTS**

We observed that the age of patients varied from 19 to 73 yrs. The average incision length in study group was 6.88 cm. The average operative time was 29.3 minutes with a standard deviation of 8.5 min. Minimum operative time was 15 minutes and maximum was 45mins. Only 30% of the patients required I.V. analgesics intra-op with local anesthesia. Whereas 70 % were pain free with local anesthesia only. Only 18 % of the patients complained of Post-op pain that too was controlled by oral analgesics. Rests were pain free. Two patients developed hematoma and Seroma. Three patients developed wound site induration and infection. The range of post-op stay was 4 to 48 hours postoperative. Only one patient stayed for 48 hrs that to due to complications. Rest of 49 patients was discharged in less than 24 hrs. 82 % of the patients were able to return to work in 7 days whereas 18 % returned in 14 days.

#### **DISCUSSION**

Various new techniques described in this modern era are to reduce the tension and use of autologous graft & prosthetic material to reduce recurrence but recurrence and persistent post-operative pain are two main problems. Open Lichtenstein tension free meshplasty is accepted as gold standard in inguinal hernia repair in modern era.<sup>6,7</sup>

Kulacoglu et al concluded that local anaesthesia has a short learning curve and requires simple training. It is more economical as it requires shorter operating time and hospital stay.<sup>8</sup> Metzger et al conducted a study over 440 patients with special consideration to day care surgery. There were no significant differences in patient's satisfaction, postoperative attendance for medical

advice or time back to work between the day-case and in-patient group. They concluded that Lichtenstein repair offers an excellent and simple technique for hernia repair as a day-case procedure.<sup>9</sup> Chyung et al studied the technique of tumescent local anesthesia and concluded that local anesthesia with tumescent technique is an effective and safe modality for inguinal hernia repairs.<sup>10</sup>

Amid et al performed a prospective study on simultaneous repair of bilateral inguinal hernias under local anesthesia and concluded that it is feasible to perform the operation under local anesthesia, and when an open tension-free repair is used, post-operative pain and recovery periods are equally comparable with those of laparoscopic repair, although the complication and the recurrence rates are significantly less.<sup>11</sup> It was concluded, that ambulatory repair of a recurrent inguinal hernia in unmonitored local anesthesia is a safe and cost effective alternative to operation in general or spinal anesthesia.<sup>12</sup> Jacquet E et al concluded that Tension-free technique under loco-regional anesthesia for inguinal hernia allows ambulatory surgery with a low rate of morbidity and high satisfaction index.<sup>13</sup>

O'Dwyer et al compared patient outcome following repair of a primary groin hernia under local (LA) or general anesthesia (GA) in a randomized clinical trial. They concluded that there are no major differences in patient recovery after LA or GA hernia repair.<sup>14</sup>

Despite newer drugs lignocaine is still very safe and efficacious with good results which make it the drug of choice for any kind of local application.<sup>15</sup> Ella et al. prospectively studied 60 patients that were operated using sutures or staples. They concluded that mesh fixation with skin staples is effective with significant reduction in the operating time and complications or recurrence. Application of staples is much quicker than sutures for fixing the mesh, thus saving the operating time.<sup>16</sup>

Three stitch technique combines many advantages, such as simplicity, effectiveness, safety, comfortable postoperative course with easily controlled pain, rapid return to unrestricted activities and high patient satisfaction. Arora et al concluded that technique of three stitch meshplasty under local anesthesia is a simple, fast and cost effective for ambulatory surgery.<sup>17</sup> We had 3 month follow-up. The average duration was 29.3+8.5 mins. There was no evidence of nerve entrapment or chronic pain or recurrence.

In our study hematoma and seroma were present in 4% patients and wound site infection and induration in 6% of the patients. There was no case of urinary retention, mesh migration, mesh infection, chronic groin pain and recurrence. The results of our study were comparable to the other studies.

## CONCLUSION

We conclude that three stitch mesh anchoring technique for inguinal hernia repair is relatively easy to learn and faster with reduced post-operative complication rates. We also conclude that inguinal hernia repair under local anesthesia as a day care surgery is safe and cost effective alternative to operation in general and spinal anesthesia with relatively less complications and early ambulation.

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