Novel endo-laparoscopic surgical techniques to minimise morbidity (pain, seroma formation) and recurrence in large groin hernias

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INTRODUCTION

• One of the most commonly performed surgeries in the world, groin hernia repair, has evolved dramatically from the days of primary suture repairs and the subsequent revolutionary "tension free" anterior approach.

• In recent times, the endo-laparoscopic approach to the repair of groin hernias as proposed within the international guidelines has been extensively adopted worldwide owing to faster recovery times and lower risk of chronic pain.

• However, the endo-laparoscopic approach to large groin hernias, with its inherent risks of seroma formation and recurrence, is still an evolving paradigm.

AIM

We propose our centre's published novel endo-laparoscopic techniques for adult large groin (reducible and non reducible inguinal, inguino-scrotal and femoral) hernia surgery to minimize morbidity (pain, seroma formation) and recurrence :

• TEP/TAPP+ : for large direct hernias

• modifiedTEP (mTEP) : for large indirect hernias

• NATURE (Nerves And Transversalis-fascia Using RopivacainE) : intra operative analgesia

METHODS

• TEP/TAPP+ : direct hernia defect closure with incorporation of transversalis fascia

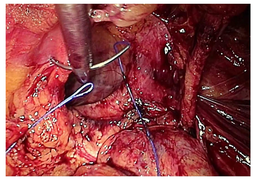


Fig 1 Right inguinal hernia direct defect

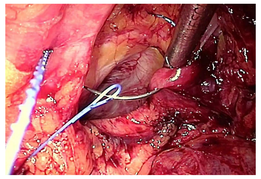


Fig 2 Closure of direct defect with 15cm non-absorbable barbed suture

METHODS (CONTD.)

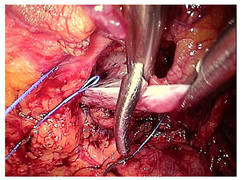


Fig 3 Direct closure involving inversion and incorporation of the pseudosac

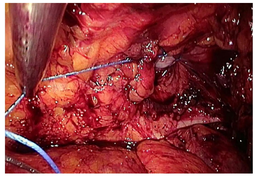


Fig 4 Completion of direct defect closure prior to mesh insertion

• mTEP : division of arcuate line and posterior sheath beyond ASIS to incorporate larger mesh

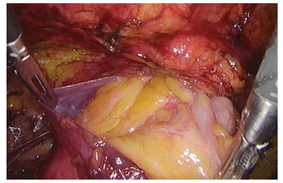


Fig 5 Reduction of hernia contents under direct vision after opening the sac

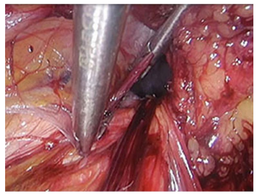


Fig 6 Pulling the remnant distal sac into the extraperitoneal space

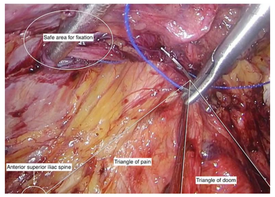


Fig 7 Inversion, plication of the hernia sac and approximation of inguinoscrotal defect

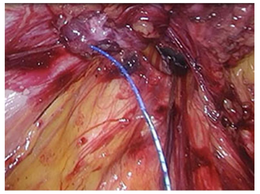


Fig 8 Completion of mTEP technique for inguinoscrotal hernia

• NATURE : infiltration of local anaesthesia at specific anatomical locations during endo-laparosocpic hernia surgery

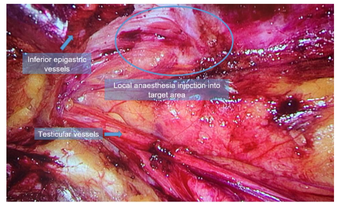


Fig 9 Ropivocaine injection into the retro-muscular tissue and transversalis fascia just lateral to the inferior epigastric vessels

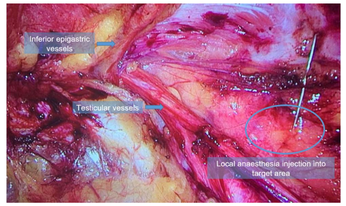


Fig 10 Ropivocaine injection into the retro-peritoneal fat tissue adjacent to the psoas muscle

METHODS (CONTD.)

For video demonstration of our novel techniques please follow the QR code :

RESULTS

• TEP/TAPP+ : Compared to the group that did not undergo direct defect closure, the group that had closure of the direct defects demonstrated a statistically significant reduction in recurrence (4.4% versus 0.9%, p = 0.036) and seroma formation (12.6% versus 6.4%, p = 0.045).

• mTEP : 14 large inguinoscrotal hernia and 4 large femoral hernia were repaired using the modified-TEP technique in 15 patients. These patients reported minimal pain after surgery. There were no reported seroma, complications or recurrences up to 9 months follow-up period.

• NATURE : The intervention group reported lower pain levels immediately after surgery (1.4 ± 1.7 versus 2.4 ± 1.9, p<0.01) and at 4 hours post-surgery (0.9 ± 1.1 versus 1.4 ± 1.2, p = 0.02). They also had lower levels of post-operative complications (4% versus 21.3%, p = 0.03).

CONCLUSION

Our tailored approach utilising our novel endo-laparoscopic techniques (TEP+ , mTEP , NATURE) minimizes morbidity (pain, seroma formation) and recurrence associated with repair of large groin hernias (inguinal, inguino-scrotal and femoral).

References:

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