DISCUSSION

Reduction of giant inguinal hernia without compromising respiratory and cardiac functions remains problems a challenging obstacle for most surgeons .

Approximately 500,000 hernia operations are performed annually in the USA accounting for 15% of all surgical procedures (***Lichtenstein I.L, 2000)***. It is estimated that 1in 20 males will at some stage in their life develop an inguinal hernia, and that at any one time 15 per 1000 of the general population will suffer from this complaint, Inguinal hernias therefore, produce a considerable morbidity within the community and represent sizable part of many general surgeon's practice(***Zimmerman I.M.,1997)***.

As modern surgical techniques evolved in the late 19th century the principles of hernia repair were developed Marcy in 1878 highlighted the importance of legating the hernial sac and repairing the facial defect at the Internal ring, principles which to day represent the basic goals of all hernia repairs. **Bassini E** stressed the importance of dividing the transversals fascia and reconstructing the posterior wall of the canal by approximating the transversals fascia and muscle to the upturned deep edge of the inguinal ligament. This technique continues today to remain popular with many surgeons (***Bassini E , 1989).***

Cheatle G.I , first proposed a preperitoneal approach to the posterior wall of the inguinal canal, and approach, which has recently been repopolarized by Nyhus .This technique is particularly effective for difficult recurrent hernial previously repaired through the inguinal canal(***Cheatle G.I, 1990)*** .

Many different methods have been advocated to repair the posterior wall, most requiring approximation of the tissues under tension to close the hernial defect. Unfortunately, this type of repair contributes significantly to increase postoperative pain and a predisposition to hernia recurrence. More recently, some surgeons have advocated a tension-free repair of the hernial defect using autogenously tissue (e.g. fascia lata) or more commonly, inert foreign materials such as polypropylene mesh or Dacron mesh. With tension-free technique, the recurrence rate can be reduced to 2% as supported by recent studies ***(Lichtenstein I.L.2000)***.

Most patients still experience significant postoperative groin discomfort which usually persists for 7 to10 days .This discomfort is related to the necessary skin incision and the subsequent dissection of posterior wall of the inguinal canal. For this reason most patients are unable to return to work in less than Two months. Many surgeons advise their patients to avoid strenuous activity during this time to minimize the possibility of disrupting the repair. Most mesh repairs are performed ventral to the posterior wall of the inguinal canal ***(Nyhus LM, 1996).***

Endoscopic hernia repair addresses the basic tents of traditional hernial repairs. Placing a patch at the internal ring obliterates the indirect defect and the direct fascia defect is repaired without tension, with the following advantages :

*No groin incision, thus postoperative pain and discomfort is minimized.

- The inguinal canal is not opened and the risk of injury to the structures within the spermatic cord, including the ilioinguinal and genitofemoral nerves is minimized.

- * The stapled preperitoneal mesh repair is further supported by the increased intra-abdominal pressure holding the mesh to the fascia, thus reducing migration.
- *It allow access to the preperitoneal space for subsequent placement of a large piece of mesh over the myopectineal orifice for a truly repair (***Smith ,R.S ,1999***) .

In the present study 20 patients with huge inguinoscrotal hernia during last 2 years which we studied the suprapubic transverse (Pfannenstils) incision and laparoscopic transabdominal preperitoneal repair for giant inguinal hernia the patients were divided into 2 groups randomizlly each of 10 patients .

In dealing with these massive hernias ,interaoperative reduction of the omentum and intestine into the peritoneal cavity may be difficult or impossible without appropriate preoperative preparation. Resection and anastemosis of the intestine occasionally has been performed to allow wound closure .However, this rarely should be necessary (***Condon ,R.E.,1995***) .

Regarding the operative procedure 2 methods were applied :

The frist group of patients had repair by suprapubic transverse (Pfannenstils) incision in which we used (PPM mesh) polyprolin mesh instead of subamblical incision used by Stoppa ,this technique done in 13 cases 10 cases from start as open technique and 3 other cases converted from other group because difficult of dissection and massive bleeding during laparoscopic repair ,the hernial sac that dissected blunt and sharp dissections to relies the adhesions, also the dissections is used for reperitonealization beneath the mesh to prevent direct contact between the latter and the intestine. Moreover one piece of giant mesh is

inserted in the periperitoneal space, and allow reduction of the giant hernia without compromising respiratory and cardiac functions ,this technique used by **Wantz, (*George E.Wantz*; 1998)** .Its modified to Stoppa repair for giant prosthetic reinforcement the visceral sac through a transverse incision but Stoppa repair through subambilical midline incision.

Wantz.GE have experience and huge number of patients with prop are follow up, with No deaths, life threatening complications, or neuropathies occurred. No deep infections occurred in the patients ***(Wantz GE, 1989)*** .

In our study theirs some difficulties and iteraoperative complications as

*there were One case of hemorrhage from pampiniform plexus in Open surgery group controlled.

*we had 2(20%)cases needed to resection anastomosis in Open surgery group because sever adhesions and massive contents in sac.

*there were 2(20%)cases suffering from subcutaneous hemorrhage in Open surgery group then controlled.

Operative time was ranging from 85-115 minutes with a mean time 94.5+_8.94 minutes in the open surgery group.

In the Laparoscopic group operative time ranging from 100-125 minutes with a mean time 107.86+_7.56 minutes.

*hospital stay ranging from 7-12 days with a mean 7.85+_1.63 days in Open surgery group.

*In Laparoscopic group hospital stay ranging from 5-7 days with a mean 5.29+_49 days.

Fleming W.R stated The range duration of operation was used (70-90) minutes in open surgery repair but for laparoscopic trnsabdominal repair duration range (75-100)min ***(Fleming W.R ,T.B. Ellitott,R et al , 2001)***

In 1994,Merree ,described a new technique for repair of giant inguinoscrotal hernia. It consists of reduction of the hernia ,repair of the hernia orifices with Marlex mesh; creation of midline anterior wall defect to increase intera-abdominal capacity; covering this defect with another piece of mesh; then covering the mesh with a flap of inguinoscrotal skin (***Merret,N.D, 1994).***

Although this technique increases the intera-abdominal capacity and allows reduction of the hernia without compromising respiration, yet it is considerd as two separate procedures with no trial for reperitonization beneath the prosthetic patch. Moreover,the use of inguinoscrotal skin flap is probably not necessary because most of the patients are old with redundant skin that could easily be mobilized to close the wound. The actual problem resides in the deficient peritoneum and the abdominal wall musculature but not in the overlying skin .

Preoperative preparation of the patient with giant hernia by means of progressive induced pneumoperitoneum was suggested initially by Moerno in 1940 (***Moreno,I.G., 1999)*** .The pneumoperitoneum gradually enlarges the abdominal cavity to provide room for interaoperative reduction of the herniated intestine .

In practice ,the patient is ready for operation after induction of pneumoperitoneum.the end point being judged by the tension of the abdominal wall which should feel as a drum (***Barst H.H, 1999).***

Much patients reassurance may be needed and severe symptoms as discomfort, shoulder pain ,tachycardia and dyspnia my necessitate gas withdrawal (***Caldironi, M.W, 1990).***

Contraindications to pneumoperitoneum include abdominal wall sepsis,prior cardirespiratory decompensation and strangulation of hernial contents (***Delvin ,H.B., 1999)***

Pneumoperitoneum has been used in the past in patients with giant hernias.Today, the intestine is returned to the peritoneal cavity,even if this increases the abdominal pressure ,and the patient remain intubated and on ventilator support for 1 to 4 days after operation until the tissues adjust, the diaphragm return to a relatively normal position and the need for respiratory support no longer is present ***(Condon ,R.E, 1995)*** .

The second group of patients had repaired by laparoscopic trans- abdominal preperitoneal repair ,were applied the most popular international Laparoscopic methods of repair , for 10 cases . Herniorraphy winner in 7 cases other 3 cases converted to open surgery repair.

During the operation ;

*Two cases contents of sac reduced spontaneously.

*Three cases there was adherent the contents to the sac and to each other so it needed sharp and blunt dissections to relief the adhesions.

*Two cases mild retro peritoneal hemorrhage was controlled by pressure and diathermy.

*In Three cases this technique failure so referred to open surgery because massive adhesions and bleeding from omentum.

In general the transabdominal preperitoneal mesh repair appears more safe, anatomical and effective in reducible hernias ,less postoperative pain , faster return to work and normal activities compared with open repair .But the time consuming and more difficult to perform than the other method .

In this group patients return home early than open surgery , also return to work and lifestyle more early in comparison to open surgery repair. But some patients complained from abdominal distension, though this resolves within 2-3 dyes.

A variety of prosthetic materials have been used for abdominal wall replacement with equivocal results. polypropylene mesh has been the most widely used one since it was first introduced in 1963 . (*Amid.P.K., Shulman .A.G, 1992).*

There have been several reports where erosion of the mesh into the stomach (*Schneider,R. 2001)*, the splenic flexure of the colon , the small bowel (*Stone,H.H, 2002)* have occurred, resulting in obstruction or fistula formation .

Bauer (*Bauer,J.j, 2001)* ,used expanded polytetraflouroethylene (e-PTFE) patches for repair of 28 cases incisional hernias and found that complications related to adhesions, erosion of the patch material into the viscera, bowel obstruction, or fistula formation did not occur. They believe that the e-PTFE patch represents an advance in synthetic abdominal wall substitutions.However,they recommended further study and greater clinical experience.

De Bord, reported that polypropylene mesh is preferable to e-PTFE mesh for repair of contaminated abdominal wall defects, and that the incidence of seroma is higher with the latter (*DeBord,J.R, 1999)* .

On the other hand ,Solar found that covering the mesh on its intestinal surface with a layer of absorbable material such as vicryl,or with e-PTFE patch does not prevent complications(*Slar ,M, 1999)* .

We agree with Lamb that PTFE may be the preferred prosthesis when there is a possibility that mesh and viscera are in close proximity (*Lambe, J.r, 2001)* .

Also we agree with Amid that polypropylene mesh is the recommended prosthesis in preperitoneal hernioplasty unless there is a risk that prosthesis may be exposed to the bowel where PTFE may be the material of choice (*Amid,P.k, 2001)*

Because of the cost of PTFE mesh and its minimal reaction that causes insufficient fibrous response and infiltration with fibrils rather than dense organized collagen, Van der, suggested reservation of this material for patients in whom underlying peritoneum cannot be established .

In our clinical results, no major complications occurred. The most common complication haematoma and scrotal edema 4 cases in open surgery group. The major factor extensive dissection during reduction of sac and put the mesh preperitoneally.

In the Laparoscopic repair group3 cases failed and reared to open surgery the main factors sever adhesions .

Postoperative complications such as groin discomfort ,dyspnea, seroma, hematoma, scrotal edema, deep venous thrombosis, wound infection, ecchemosis .

Also in Laparoscopic repair ,there are chest infection, pneumoperitoneum and pneumo-scrotum all managed within two to three weeks with no morbidity or residual complications.

Our results are nearly the same in comparison with the international results .Our study and techniques of repair, results, complications and number of failures, in relation to the number of cases done are nearly the same. But we are in need of further refinement of the technique, mastering of different laparoscopic methods of repair, longer follow up period, and a large number of cases to go in an actual and real comparison with the international results.