Before starting the rTAPP procedure, it is important to obtain a watertight urethral-vesical anastomosis that is confirmed by distending the bladder intraoperatively with sterile saline solution (Photo 2). In addition, it is also important to have a good hemostasis that could be tested by decreasing the intra-abdominal pressure to 5 mmHg before starting the hernia repair. Likewise, a preoperative sterile urine culture should also be confirmed.

Our technique of rTAPP inguinal hernia repair was reported and presented previously at the EAU ERUS 2016 Meeting (6). During the transthoracic rTAPP procedure a large peritoneal incision is made on the lateral sides of both medial umbilical folds, below the level of umbilicus opening the preperitoneal space. If bilateral extended pelvic lymph node dissection is also performed then the lymphatic tissues around external iliac arteries and veins up to the ureters are all cleaned giving the console surgeon a good anatomical exposure of the important vascular structures. It is important to include the peritoneal dissection lateral to the internal inguinal ring. It is also important to particularly pay attention to vascular and pain triangles during dissection. Vascular triangle includes external iliac vein, external iliac artery, femoral branch of genitofemoral nerve and femoral nerve, whereas pain triangle includes femoral branch of genitofemoral nerve, femoral nerve and lateral cutaneous nerve of thigh.

Mesh materials: Before repairing the inguinal hernia defect with a mesh material, lateral and superior edges of the peritoneum are freed creating a space to locate the mesh. There are different mesh types available on the market to use for hernia repair. In addition to the polypropylene mesh materials, bio-absorbable coated permanent mesh materials are also available to cover the defect. Mesh size could be adjusted according to the size of the defect. Before inserting the mesh material through the assistant port into the abdominal cavity, the bedside surgeon and the nurse always change gloves before handling and manipulating the mesh material to decrease the risk of contamination. Thereafter, the mesh material is introduced into the abdomen through the 11 mm sized assistant port (Photo 3).

Rarely, omentum, bowel segments or even urinary bladder could be found as herniated into the hernia sac and these structures should be carefully deconstructed. Following the application of the mesh material over the defect, laparoscopic applied suture (absorbable or non-absorbable) could be used to secure the mesh over the hernia defect (Photo 4). Alternatively, a suture material could also be used for this purpose. Attention should be paid not to injure spermatic cord, testicular artery, genitofemoral nerve, epigastric artery or external iliac vessels during mesh application and securing.

If a bio-absorbable coated permanent mesh is used, peritoneum could be left open otherwise it should be closed over the mesh by using a mesh absorbable suture (Photo 5). An abdominal drain is introduced and is removed during the postoperative follow-up. On postoperative Day 3, urological catheter is removed following a confirmation of no leakage on cytography.

Robotic repair of the inguinal hernia by using mesh materials following the completion of the RARP seems to be a safe and easy procedure to perform by taking specific precautions and having the proper training and knowledge to avoid a further operative procedure for the patient.

References

Monday 27 March 10:30-12:15 Thematic session 38, Masterclass RARP Semi-Live; Management of inguinal hernias during robot assisted radical prostatectomy

Photo 1: Appearance of an inguinal hernia during RARP (Courtesy of Author's Photo Archive).

Photo 2: Appearance of a water-tight urethral-vesical anastomosis following the completion of the RARP procedure (Author’s Photo Archive).

Photo 3: Appearance of the introduced and located mesh material covering the inguinal hernia on the abdomen (Author’s Photo Archive).

Photo 4: Application of titanium tacks on the sides of the mesh material to secure it over the defect by laparoscopic applicer (Author’s Photo Archive).

Photo 5: Peritoneum is closed over the mesh using a running absorbable suture and a drain is introduced (Author’s Photo Archive).