MODIFICATIONS IN RAIL ROAD TECHNIQUE FOR RUPTURE OF MALE URETHRA

SAFIR ULLAH AND MUMTAZ KHAN

Department of Surgery,
Agency Head Quarter Hospital, Landi Kotal,
Khyber Agency and Govt. Lady Reading Hospital,
Peshawar.

Rail road technique is an older classical method of treating complete rupture of membranous urethra. Complete rupture of membranous urethra causes floating of prostate and disruption of urethral continuity. This technique rail roads a catheter across the gap and drawing the prostate down on to the triangular ligament. This technique has been reviewed in our general surgical unit. Some modifications were made in the technique and was used in five cases.

In classical rail road technique a metal bougie is passed from the bladder through the internal meatus into the retropubic space. A second metal bougie is passed from the external urinary meatus. The two bougies are manipulated until their tips touch (Figure 1). By slowly with drawing the first bougie and steadily advancing the second, while keeping their tips in contact, it is possible to guide the second bougie into the bladder, past the site of rupture. The first bougie is withdrawn and a piece of plain rubber tubing of such a size as to fit tightly, is threaded on to the beak of the second bougie, which is withdrawn, carrying with it the rubber tubing. Out side the external urinary meatus the bougie is disengaged from the rubber tubing and to the latter is fastened, by means of a stitch, the tip of the Foley catheter. The excess of the thread is woven around a wooden spatula. This silk thread is used for changing the catheter later on if needed. Baloon of the catheter is inflated with water moderately. The catheter is drawn down so that the baloon rests upon the bladder neck. The bladder is closed around a Malecot catheter and the prevesical space is drained with tube or corrugated rubber. (Figure 2).

MODIFICATIONS

Modification in this technique include:

1. Stabalizing Prostatic Stitches:

After complete rupture of membranous urethra, prostate displaces and floats high. Something has to be done to bring the prostate to its original anatomical position. This will result in good healing of urethra around catheter and thus preventing long tight wavy stricture. Old classical method for pulling down the prostate was traction on catheter. This is no more used because of danger of damage to the sphineter of urethra.

These stabilizing prostatic stiches have given encouraging results in our five cases. Nonabsorbable sildk suture was used. These stiches are applied by taking deep bite in the anterior capsule of the prostate with the help of small
of long curved cutting skin needle. After bringing out both ends of the suture through the perineal skin, it is tide over a sterilized piece of gauze. In this way two stitches are applied on right and other on left side from the anterior capsule of the prostate. These stitches hold the prostate in its place. The stitches are removed after two weeks.

2. Intraluminal position of the Silk Thread

Second modification in this technique concentrate on the silk thread which is tied to the tip of foley catheter and is used for its replacement when it is either blocked or its baloon burst. In old classical method this silk thread lies free and naked in tissue. This modifi-
cation keeps the thread with in the lumen of the tube which drains the cavity of the bladder. Special instrument used in this modified technique is a needle designed locally in our unit. It is named as Khyber needle. It is fifteen centimeter in length and has diameter of half a millimeter. It’s sharp

Fig. 1. Intrapelvic rupture of urethra showing type of mental boregies in contact.

curved round body needle. Then this needle is cut of from the silk stitch. Both ends of the stitch are now brought through the perineal skin with the help

Fig. 2. Old Classical Rail Road Technique.
end carries an opening for silk thread the same way as eye of skin stitch needle (Figure 3). Tube drain is used to drain the bladder cavity instead of Foley or Malecot catheter. We have used simple Ryle tube of size FR 18.

During the rail road procedure whenever the step of passing the Foley Catheter through the urethra into the bladder across the rupture site is completed, one end of the thread is tied to the tip of the catheter and the other end is passed through the lumen of tube drain for about 6 – 7 cm and then pulled out from its side with the help of the specially designed needle. The sharp end of the needle is passed through the wall of the tube at about 6 – 7 cm from its end and then the needle is tilted into the lumen and pushed till the pointed end appears out of the end of the tube (Figure 4 a, b). The free end of the thread is passed through the eye of the needle and the needle is slowly pulled back and out of the tube. The thread is disengaged of the needle. The thread is pulled till the tips of both Foley catheter and tube drain touch each other. In this position the bladder is closed around the tube drain carrying the thread in its lumen. The length of the segment of the tube through which the thread runs depends upon the built of the patient. The excess thread is woven around the tube. Tube drain is fixed in every layer of tissue with purse string catgut stitches. In skin it is fixed with a purse string silk as well as with side anchoring stitch. (Figure 5).

Post operative care of this modified technique is the same as that of the old method. Supra pubic extravesical drain is removed after 3 – 4 day. Urethral Catheter and Supra pubic intravesical tube drain are kept for three weeks. Urethra heals with in 2 – 3 weeks. After three weeks the catheter with thread is removed after deflating its baloon. The tube drain is clamped and patient is asked to pass urine. Urethrogram is also performed. If patient can void urine and urethrogram is satisfactory, the supra pubic tube that drains the cavity of the bladder is removed. Better to recatheterize the patient for another week till the supra pubic leak heals. Antibiotic cover is essential in post operative period.

MERITS

In our unit this modified technique has been performed on five cases and the following merits were evaluated.

(1) The stabilizing prostatic stitches keep the prostate in its place, resulting in good healing of urethra around the catheter. This prevents long tight and wavy stricture. If stricture occurs after this procedure, is usually short segment stricture and is easy to deal endoscopically.

(2) In classical method silk thread lies free in tissue beside the tube and there is constant danger of seepage of urine in and around the thread into the wound.
Model Technique

Fig. 4

Step a

Tube Drain

Needle
is piercing the side
wall of the tube

Step b

After piercing the side wall
the needle is pushed through
the lumen till it's pointed end
appears.

Peri vesical drain

Tube drain

Thread lying within the
lumen of the Tube

Fig. 5
Thus it can cause infection. In modified technique the thread lies with in the tube and thus decreases the danger of seepage of urine in and around the thread.

(3) During replacement of the catheter the thread cuts through the bladder and abdominal wall tissues and can cause urinary leak and infection in the wound. In modified method the thread slips with in the tube, thus avoiding the cutting of tissues.

(4) In classical method during catheter replacement, some time overpulling of the thread causes displacement of the catheter out of the bladder. In modified method this displacement of catheter is prevented by the end of the tube. Pulling of the thread causes the tip of the catheter to touch the end of the tube and thus remains in bladder cavity.

REFERENCES


