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A Case Report: Management Obstetric Ureterocervicovaginal Fistula with Psoas Hitch Technique

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ABSTRACT--- *Urogenital fistula is one of the causes of women's decreasing quality of life. The woman's inability to urinate normally will greatly disrupt the life of the woman herself throughout her life if it does not receive serious attention. The prevalence of fistulas is 1 in 1000 women and the largest in developing countries. It is associated with labor, pelvic organ malignancies, radiation and complication of operation. Mrs. M, 32 years old, Parity 2 Abortus 1, came with chief complaint of urinary seeping from the genitals for three months. She had history of cesarean section surgery 3 months ago. The results of the methylene blue test were negative. Abdominal CT Scan with Contrast were performed and left hydronephureter with urethritis were found. We diagnosed ureterocervicovaginal fistula. During surgery, ureterocervicovaginal fistula was found on the left and abdominal ureteroneocystotomy was performed with Psoas Hitch technique and Lich Gregoir technique. There were no postoperative complications and recurring complaints related to urinary incontinence and the result of Abdominal CT scan with Contrast after 2 month did not show contrast extravasation of the left ureter. Psoas Hitch Technique is one of the managements in case of ureterocervicovaginal fistula.*

Keywords--- *Ureterocervicovaginal Fistula, Psoas Hitch Technique*

I. INTRODUCTION

Urogenital fistula is one of the causes of women's decreasing quality of life. The woman's inability to urinate normally would naturally greatly disrupt the life of the woman herself throughout her life if it does not receive serious attention. The prevalence of fistulas is 1 in 1000 women. One incident that has been raised in general is 1-2 per 1000 births for all populations in the world. The largest is in developing countries, related to childbirth and malignancies and radiation. Another report explains the estimated 2 million women suffering from urogenital fistulas worldwide. However, this number is still smaller than the real one (Roy et al., 2006; Raut, 1993).

In the last 15 years of observation, at Mayo Clinic there were 303 cases of urogenital fistula, 31 of which were ureterovaginal fistulas, and the most was the impact of hysterectomy. In developed countries, fistulas occur as a result of hysterectomies, whereas in developing or poor countries fistula events are associated with obstetric cases. Data from two hospitals in Kenya from January 1999 to December 2003 stated that the high incidence of urogenital fistula is the impact of obstetric complications such as curettage and cesarean section and gynecological complications such as hysterectomy (Riley, 2004; Mabeya, 2003).

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In the case report that will be presented, we present a case of ureterocervicovaginal fistula which was successfully managed operatively using the Psoas Hitch technique.

II. CASE REPORT

Mrs. M, 32 years old, Parity 2 Abortus 1, came to the obstetric and gynecology office with complaint of urinary seeping for the past three months. She felt the seeping intermittently and had unpleasant odor. Complaints had appeared seven days after cesarean section surgery, three months earlier at the Private Hospital. The surgery indication was previous cesarean section of less than 18 months. There were no history of leucorrhoea or fever. Lower abdominal pain dysuria were absent. A history of recurrent urinary tract infections is absent. History of pelvic area trauma is absent. No history of radiation treatment. Missing malignancy history.

Examination of the general status was sick with moderate consciousness. The vital signs were normal : respiratory rate 18 times per minute, pulse frequency 86 times per minute, blood pressure 110/70 mmHg, and temperature 36.9 ° C. On genital examination, the urethra vulva appeared calm, no signs of inflammation, no mass, and no laceration. Inspeculum examination was performed with result : the vagina appeared calm and there were no signs of inflammation, mass, or laceration. A methylene blue test with negative results was also performed. After a while the urine appeared out through the cervical section and increased after an emphasis was made on the patient's bladder. Complete blood laboratory examination, ECG, and thorax X-ray were normal. A CT scan of the abdomen with contrast were performed showing a left hydronephureter with urethritis.

From the results of history taking, physical examination and supporting examination of the patient, a ureterocervicovaginal fistula was diagnosed. Patient was treated at the Gynecology ward of Dr. Wahidin Sudirohusodo Hospital Makassar. The patient was planned for surgery.

During surgery, ureterocervicovaginal fistula was found on the left side and ureteroneocystotomy was performed with Psoas Hitch technique. The purpose of this technique was to reconstruct a bridge for ureteral injuries that occured in the distal third of the ureter. The pfanennsteil incision was used in this operation then the bladder was filled with fluid in order to make it easier to see the boundary of the bladder lining. Cavum Retzii was identified and released from the peritoneum. The ureter was also identified and brought near the superolateral part of the dome of the bladder and an anastomosis was performed. The ipsilateral bladder dome was tethered to the Psoas Minor tendon or Psoas Major muscle with several stitches and carried out carefully to prevent injury to the genitofemoral nerve.

Management for vesicoureteral reflux was performed with Lich Gregoir technique. The bladder is moderately filled and then retracted medially to help identify the ureter. The ureter is then identified and a vessel loop placed around it. The peritoneum is dissected off of the posterior aspect of the bladder where the reimplantation is intended. The serosal and muscular layers of the detrusor are opened along a straight course cephalad and lateral to the ureterovesical junction for 4-5 cm, freeing the ureter during the dissection. The detrusor is separated from the underlying mucosa to create the antirefluxing trough. Ureteral continuity is not disrupted. The ureter is placed within the trough, the detrusor is closed with interrupted absorbable sutures. Foley catheter may be left in place overnight.

Patient was advised to be treated with catheter care for 14 days. We gave antibiotics and educated for minimal mobilization much during post surgey period.. During the treatment of the patient there were no fever, nausea, urinary pain, or postoperative complications. On the 14th day postoperatively, the catheter was removed. There were no pain and fever. On postoperative examination, there was no complication in surgery wound. The patient was observed for 2-3 days and no urine seepage from the genitals. Follow up recommendation was three weeks after hospitalization. After 2 months after surgery, the patient came to control to do a CT scan of the abdomen in contrast and the results did not show contrast extravasation of the left ureter.

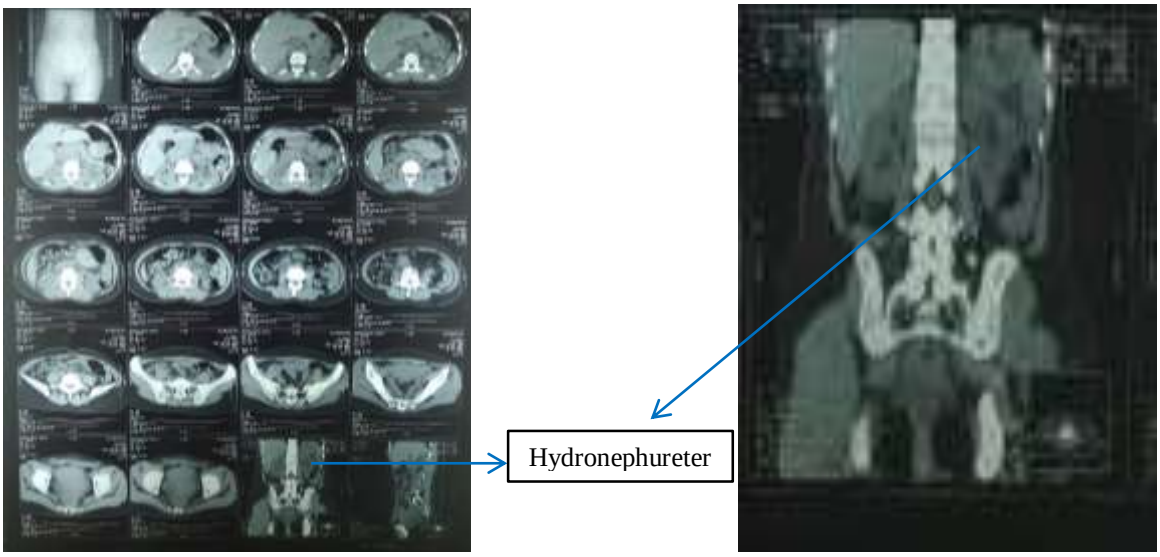

Figure 1. Contrast Abdominal CT Scan

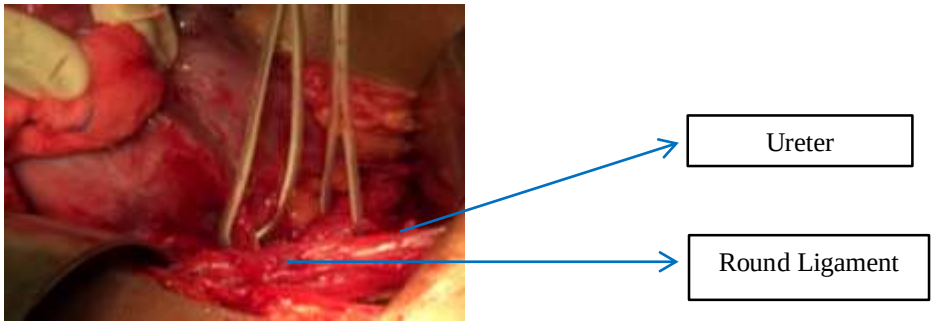

Figure 2. Location of Ureter

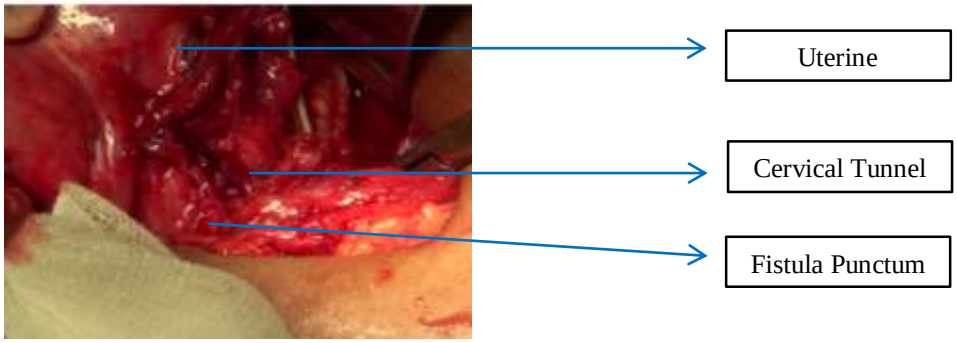

Figure 3. Location of Fistula

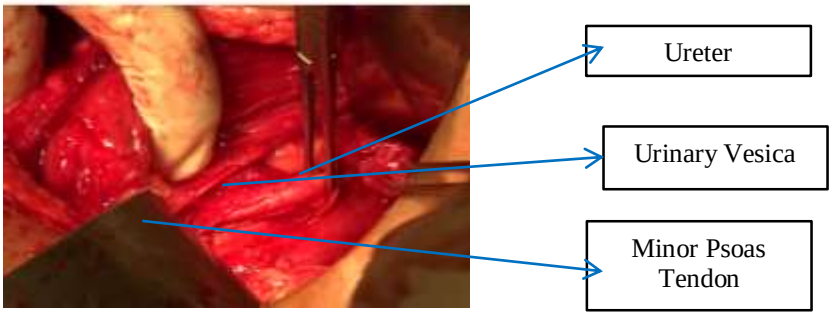

Figure 4. Psoas Hitch Technique

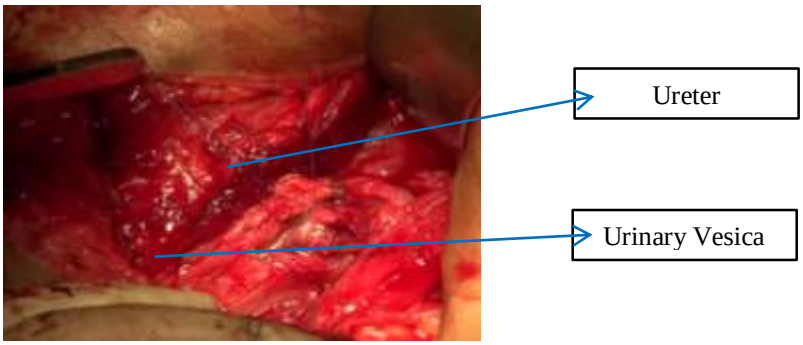

Figure 5. Lich Gregoir Technique

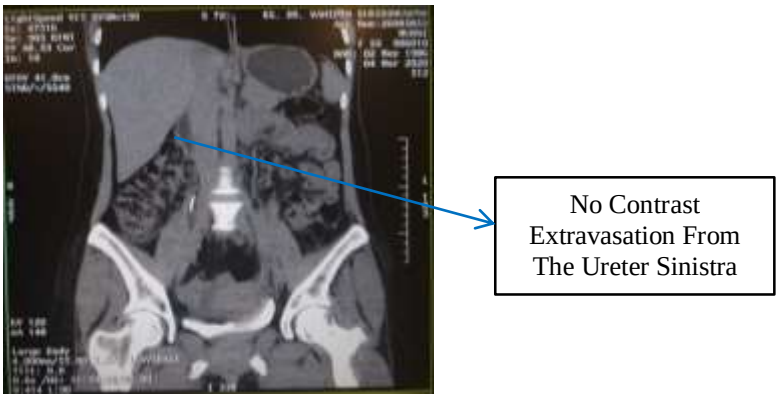

Figure 6. Contrast Abdominal CT Scan

2 Months After Operation Ureteroneocystotomy

III. DISCUSSION

Urogenital fistula is defined as an abnormal relationship between two or even more internal urogenital organs or the formation of a relationship between the urinary tract (urethra, bladder, ureter) and genital tract (vagina, uterine, perineum) (Clement et al., 2001). The causes of fistulas can be obstetric or gynecological. The most common fistulas are due to obstetric trauma, then due to surgical trauma, radiation, inflammatory bowel disease, infectious diseases, and neoplasms (Roy et al., 2006). General classification of urogenital fistulas can be grouped into 4 types, namely: Vesicouterina, Urethrovaginal, and Vesicovaginal and Ureterovaginal. But in general, there are two important factors that must be involved in each division of a urogenital fistula in order to get a more accurate prediction of the outcome. These factors are (Junizaf, 2002; Santoso, 2002) : first the amount of damage, which is measured based on the size of the fistula, scar tissue in the vagina and bladder and second involvement with the mechanism of urine flow, which means determining the location of the urethra and bladder neck. To assess

objective damage that occurs in the bladder neck is very difficult, however, measurement of the length of a healthy urethra can produce a fairly reliable assessment The incidence of ureteral injury in cases of cesarean section complication is around 0.027 - 0.09%. Whereas the distal third rate was 51%, the upper third was 30% and the medial third was 19%. And the incidence of ureteral injury in cases complication of gynecology operation is around 0.02 - 3%. (Matthews et al., 1997). In this case a ureterovesicovaginal fistula was found in the distal third of the ureter. The cause of this fistula due to obstetric complications is postoperative cesarean section.

Partial urine leakage is not realized by the sufferer herself. The possibility arises from time to time depending on the position of the patient, or when the bladder is fully charged. Evaluation should involve a physical examination. complete and detailed history of the pathology of patients with urogenital fistula and recorded in an easily accessible recording system. Urogenital fistula assessment based on clinical symptoms and vaginal examination includes diagnostic tests such as the methylene blue test or double dye test, indigo carmine test and radiological examination such as intravenous urography, retrograde urography, cystography, CT scan and laboratory examination (Josoprawiro, 2002). MRI and CT have both been increasingly used for the purpose of diagnosis of vaginal fistulas. MRI can provide anatomical information on potentially functional fistulas mainly using heavily T2 weighted sequences that allow detection of the presence of fluid in the lumen of the fistula. CT techniques are based mainly on intravenous late opacification of the urinary tract and/or retrograde bladder opacification (Botsikas et al., 2017).

Double-dye test is used to detect ureterovaginal fistula. The patient is given oral phenazopyridine (Pyridium) and indigo carmine or methylene blue is inserted into the bladder through the urethra catheter. Pyridium makes urine red and methylene blue or indigo carmine makes urine blue. The presence of a blue color in a tampon indicates a vesikovagina or urethrovagina fistula and if red indicates a ureterovaginal fistula. The Moir tampon test can be used to help detect ureterovaginal fistulas. Some tampons are loosely placed throughout the entire length of the vaginal canal, and indigo carmine (5 mL) is given intravenously. Then the patient is told to walk around the room. After 10 to 15 minutes, tampons are taken one by one from the vagina, if the lower tampon is not blue and the tampon at the top of the vagina is blue, then ureterovaginal fistulas should be suspected (Santoso, 2002). The fistula should be known immediately and then plan for fistula repair. In the case of vesikovagina fistula can be detected visually. Whereas other types such as ureterovaginal fistula or vesicouterina can be assisted by urogram or flouroscopy examination and CT Scan (Shobeiri, 2001). In this patient a methylen blue test was performed with a negative result so that it was decided to have a supporting examination in the form of a CT Scan Abdomen Contrast with the results appearing left hydonfroureter with urethritis. From these results corroborate the alleged diagnosis leading to ureterovaginal fistula.

In general, management for ureteral injury, stricture, and obstruction depends on the duration of the defect, location, etiology, and time of diagnosis. Ureteroneocystostomy is the procedure of choice for repairing distal ureteral injuries near the 3-5 cm bladder. This injury is different from more proximal injuries because it is often associated with interruption of blood supply from the iliac vessels and therefore should be corrected with ureteroneocystostomy. There are several ureteroneocystotomy techniques including Politano Lead Better, Lich Gregoir, Cohen Cross Trigonal reimplantation. Modifications such as Psoas Hitch and Boari Flap allow correction of ureteral injuries that are longer than 5 cm. Principles for successful ureteroneocystostomy results include lack of tension, ureteral debridement and spatulation, and postoperative drainage. Open and minimally invasive

laparoscopic approaches to ureteroneocystostomy can also be performed (Sugarbaker et al., 2001; Elliot, 2006; Modi et al., 2005).

Psoas Hitch is a useful technique for bridging ureteral injuries involving the lower third of the ureter. Indications include distal ureteral injury, ureteral fistula secondary to pelvic surgery, segmental resection of distal ureteral tumor, and failed ureteroneocystostomy. Psoas Hitch's contraindications include a small bladder contracted with limited mobilization and a proximal ureteral defect to the pelvic margin. Complications of acute postoperative ureteroneocystostomy can include: urinary extravasation, ureteric obstruction and hematuria and infection. Long-term complications of ureteroneocystostomy can include: persistent reflux, contralateral reflux, ureteral obstruction, and vesicourinary fistula. Complications in the Psoas Hitch technique are genitofemoral nerve injuries, usually occurring when placing a suture that attaches the bladder dome to the Psoas Minor tendon or Psoas Major muscle (Matthews et al., 1997; Ehrlich et al., 1978; Hemal et al., 2010).

The Lich-Gregoir extravesical ureteral reimplantation, as well as modifications thereof, has become the standard technique for management of the ureter during renal transplantation. The limitations and risk are increased risk of urinary retention after simultaneous bilateral extravesical reflux repair (2.5%), ureteric obstruction (<1%), persisting vesicoureteral (<2%), periostial formation of a bladder diverticulum (Lipski et al., 1998). For a successful outcome, ureteral tension, torsion and angulation should be avoided during ureteroneocystostomy. So instead of extensive ureteral mobilization, it is better to mobilize the bladder and the do psoas hitch. It also gives an additional length of lower ureter for nonrefluxing anastomosis and also the angulation at anastomosis doesn't change irrespective of the filling state of the bladder. Non-refluxing anastomosis was advocated because this condition was found in the age group of those who were sexually active and were predisposed to recurrent urinary tract infection (Modi et al., 2008). The technique used in this operation is the Psoas Hitch technique where a ureteral injury is found in the distal third more than 5 cm so it was decided to use this technique. And for ureteroneocystomy we used Lich Gregoir technique. During the treatment of the patient there was no fever, no nausea, no urination pain there were no postoperative complications.

The successful management of uterovaginal fistulas depends on the time of diagnosis of the previous disease of surgery, the place of injury, the degree of injury to the ureter and the time of referral. There is no agreement regarding the immediate surgical procedure or delay in the management of fistula surgery. Immediate understanding is if within 1-3 months or less than 6 months, while the delay is in intervals of 2-4 months or 6 months and more (Waldijk, 2004). The success rate of ureteral reimplantation with a psoas hitch exceeds 85% in both adults and children. postoperative renal ultrasonography is performed about 3 months postoperatively to evaluate for obstruction. Postprocedure voiding cystourethrography (VCUG) is not commonly performed following open ureteral reimplantation because of its high success rates but is usually obtained 3 months postoperative with extravesical ureteral reimplantation (Hemal et al., 2010). By the nature of the recurrent infections after ureteral reimplantation, women may be at increased risk for the complications associated with infection during pregnancy (Austenfeld and Snow, 1988). In this case repair was carried out after 3 months postoperatively and showed significant results.

IV. CONCLUSION

Ureterocervicovaginal fistula is a rare case. The urogenital fistula surgery approach is performed on an abdominal or vaginal basis. The Psoas Hitch technique is one of management techniques for distal third ureteral injuries and Lich Gregoir technique is one of mangement for ureteroneocystotomy. Successful management of a fistula depends on the time of diagnosis of the previous surgery, the location of the injury, the degree of injury to the ureter and the time of referral and appropriate postoperative management.

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