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SIGMOIDORECTALDYNAMIC AND RADIOLOGICAL ASSESSMENTS IN SIGMOIDORECTAL POUCH PATIENTS

Hypothesis / aims of study

To evaluate the radiological findings and to measure the pressure-volume changes and uroflow rate in sigmoidorectal pouch patients.

Study design, materials and methods

A total of 10 patients who had a radical cystectomy because of muscle-invasive bladder tumor underwent a Mainz pouch II procedure between 2007 and 2011. The ureters were implanted into the post walls of the detubularized sigmoid segment at least 30 cm in length. In all cases, sigmoidoscopy was done and sigmoidal pressure and capacity and the anal pressure were measured preoperatively and at the 3rd to the 6th month postoperatively besides the intravenous pyelography (IVP) and colon X-rays and uroflow rate determination.

Results

Preoperative colon X-rays showed a passage of contrast through the descending colon at an average volume of 150 ml (average sigma capacity), whereas postoperative anteroposterior pouch X-rays showed no passage up to an average volume of 360 ml (270–532) through the descending colon. The patients feel a strong desire to void at an average volume of 160 ml (140–200) preoperatively. The sigmoidal colon pressure that was on average 35 cm H_2O at the preoperative evaluation was measured as 26 cm H_2O at the 3rd to the 6th month postoperatively (Figure 1). The Qmax was 30 ml/s and the average uroflow rate was 8 ml/s under abdominal strain (Figure 2). The renal function and upper urinary tract were preserved well (Figure 3). All the patients suffered slight incontinence in the first two months and became continent from the 3rd month on gradually with nocturia one to four times.

Interpretation of results

The continence mechanism largely determines the treatment success in terms of patient satisfaction and quality of life. At present, no consensus has been reached regarding an optimal technique [1]. The aim of urointestinal diversion is probably to develop a method which has continence, cosmetically impeccable, less metabolic complications, low pressure, high capacity, reproducible and optimal patient compliance, and preserve renal function. Fisch et al. [2] applied the “reservoir with a higher capacity and lower pressure” principle to the colon and described the diversion as Mainz pouch II (sigmoidorectal pouch)

Fisch et al. [2] have found a preoperative average pouch pressure of 23 cm H_2O in their study group of 72 subjects. We also measured this pressure level, and found 35 cm H_2O preoperatively. Although preoperative levels were higher, the average 26 cm H_2O pouch pressure that we measured at the 3rd to the 6th month was similar compared to 21 cm H_2O in their study, but significantly higher than 6.5 cm H_2O measured by Gumus E et al. [3]. The postoperative compliance of sigmoid was higher than that of preoperation owing to the detubularization of sigmoid. The uroflow pattern was abdominal straining and no post-void residuals were detected. IVP showed that the renal functional was preserved well in ten patients, and no stenosis of ureterosigmoid anastomosis occurred with the longest follow-up of 54 months. Postoperative X-ray findings showed an average volume of 360 ml of the reservoir which is similar to the physiologic condition. An episode of pyelonephritis occurred in one patient probably caused by wrong voiding habits. The large volume and lower pressure provided by the long sigmoidal segment might contribute to the good continence and unimpaired renal function. Postoperative metabolic assessment in the 3rd to the 6th months revealed hyperchloremic metabolic acidosis in one case who developed hyperchloremic metabolic acidosis and hypokalemia had a BE value of –5 mmol/l, the case did not use 15 g postoperative bicarbonate protocol regularly, hyperchloremic metabolic acidosis and hypokalemia were corrected with the oral intake of 15 g bicarbonate and kalium tablets in five days.

Concluding message

The sigmoidorectal pouch provides a reservoir with a higher capacity and lower pressure without a reflux to the upper urinary tract and descending colon with lower metabolic acidosis problem, and it is also a good alternative diversion procedure that would permit a good fate of upper urinary tract and better quality of life.

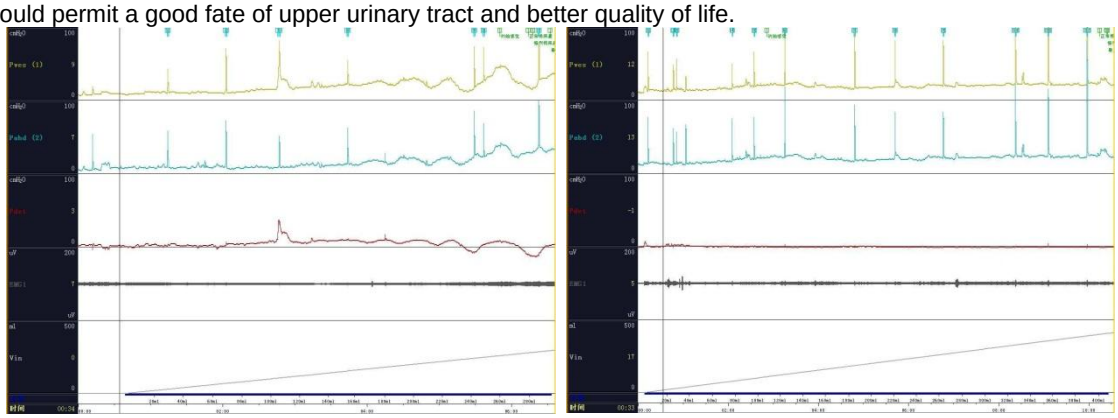

Figure1. Preoperative (left) and postoperative (right) sigmoid pressure-volume changes.

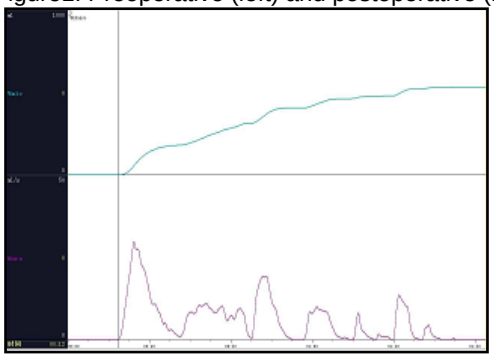

Figure 2. Uroflow rate of sigmoidorectal pouch.

Figure 3. Radiological findings of sigmoidorectal pouch and IVP.

References

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Disclosures

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