*International Urology and Nephrology 30 (1), pp. 45–48 (1998)*

# Experiences with Clam Ileocystoplasty

Ö. KAYIGIL, Ö. ATAHAN, A. METIN

Urologic Clinics of TCDD Ankara Hospital, Ankara, Turkey

(Accepted November 3, 1997)

Clam ileocystoplasty was performed in 18 patients with urge incontinence, total incontinence or enuresis with instable detrusor. Although the persistence of detrusor instability was observed in 33.33% of the patients, complete clinical cure was found in 72.23 and symptomatic improvement was 22.22%.

## Introduction

Clam enterocystoplasty that was first introduced by Bramble in 1982, has had indications and modifications since that time [1, 2, 3, 4, 5, 6]. Treatment options of primary detrusor instability, which was a common condition, include bladder drill with additional behavioural and psychotherapeutic techniques, anticholinergic drugs, perivesical phenol injections [7, 8]. Clam enterocystoplasty has been used effectively in the management of patients with detrusor instability that is refractory to more conservative forms of treatment [2].

Clam procedure has also been performed in the treatment of detrusor instability due to neurological disorders and in diurnal nocturnal enuresis that is recalcitrant to conservative therapy found in patients older than 15 years [3].

In the present study we describe our experience with clam ileocystoplasties done for different indications.

## Materials and methods

Eighteen patients (14 males, 4 females) with ages ranging between 28 and 71 years (median 44.80) underwent clam enterocystoplasties for indications of refractory urge incontinence, diurnal nocturnal enuresis that was recalcitrant to conservative therapy and total incontinence in ten, five and three of them, respectively. All patient with diurnal nocturnal enuresis were over 30 years. The aetiology of total incontinence was meningomyelocele in one male paraplegic patient. Two female patients were totally incontinent due to severe detrusor instability of more than 30 cm $H_2O$. They were over 65, and stress incontinence, intrinsic sphincter deficiency and neurological disorders were excluded in these two patients.

All patients had detrusor instability resistant to conservative treatment preoperatively. Patients with no detrusor instability were excluded from the study. Three patients had poor bladder compliance.

*Kluwer Academic Publishers, Dordrecht*
*Akadémiai Kiadó, Budapest*

*Operative technique:* Preoperative mechanical bowel preparation and intraoperative intravenous antibiotics were employed in all cases. The clam operation was performed in the coronal plane of the bladder along its maximal circumference, which is along the line attaching the bladder to the iliac vessels from a point 1 to 2 cm in the front of the ureteric orifices. A section of terminal ileum, 15 cm proximal to ileocoecal valve was isolated on its vascular pedicle and opened along its antimesenteric border and anastomosed to the bladder by the Connell technique with absorbable sutures. Suprapubic and urethral catheters were placed at the end of the procedure. Suprapubic catheter was removed on the 12th and urethral catheter on the 20th postoperative day, respectively. In the follow-up period both symptomatic and urodynamic improvements were accepted as cure. Both symptomatic and urodynamic persistences were regarded as failure.

## Results

Of the patients with refractory urge incontinence complete cure was observed in 6 (60%) and symptomatic improvement – despite instability – in 4 (40%) at a follow-up period of 18 months (Table 1).

Table 1
Results of clam ileocystoplasty

| No. | Age | Sex | Preoperative evaluation | | Postoperative evaluation | | |
|---|---|---|---|---|---|---|---|
| | | | Complaint | Urodynamic findings | Cure | Symptomatic improvement | Detrusor instability (urodynamic) |
| 1. | 30 | M | Total incontinence | Detr. inst.+poor bladder capacity | | | +* |
| 2. | 28 | M | Refr. urge incont. | Detr. inst. | + | | |
| 3. | 62 | M | Refr. urge incont. | Detr. inst.+poor bladder capacity | | + | + |
| 4. | 47 | M | Refr. urge incont. | Detr. inst. | | + | + |
| 5. | 50 | M | Refr. urge incont. | | + | | |
| 6. | 71 | F | Total incontinence | Detr. inst. | + | | |
| 7. | 30 | M | Life long enuresis | Detr. inst. | + | | |
| 8. | 32 | M | Life long enuresis | Detr. inst. | + | | |
| 9. | 66 | F | Total incontinence | Detr. inst. | + | | |
| 10. | 60 | F | Refr. urge incont. | Detr. inst. | + | | |
| 11. | 38 | M | Life long enuresis | Detr. inst.+poor bladder capacity | + | | |
| 12. | 42 | M | Life long enuresis | Detr. inst. | + | | + |
| 13. | 35 | M | Refr. urge incont. | Detr. inst. | | + | + |
| 14. | 42 | M | Life long enuresis | Detr. inst. | + | | |
| 15. | 61 | F | Refr. urge incont. | Detr. inst. | + | | |
| 16. | 47 | M | Refr. urge incont. | Detr. inst. | + | | |
| 17. | 32 | M | Refr. urge incont. | Detr. inst. | | + | + |
| 18. | 52 | M | Refr. urge incont. | Detr. inst. | + | | |

*Intermittent self-catheterization; Refr. urge incont. = refractor urge incontinence; Detr. inst. = detrusor instability

Our patients with life long nocturnal and diurnal enuresis were very resistant to conservative treatment and all of them had detrusor instability. They were cured completely three months postoperatively. Detrusor instability persisted in only one patient in this group, but he had symptomatic improvement despite the persistence of detrusor instability.

Two of three patients with total incontinence were totally continent two months postoperatively. Only one patient who was paraplegic started intermittent self-catheterization (ISC) in the second month. In this patient persistence of detrusor instability was observed postoperatively and this patient was accepted as failure (Table 1).

In all of the indications the complete cure rate was 72.23% and symptomatic improvement rate was 22.22%. Detrusor instability persisted in six patients (33.33%). Mean bladder capacity increased from 180 to 450 ml in 3 patients with poor bladder capacity (Table 2).

Table 2
Clinical and urodynamic success rates of clam ileocystoplasty

| | n | % |
|---|---|---|
| Cure | 13 | 72.23 |
| Symptomatic improvement | 4 | 22.22 |
| Postoperative detrusor instability | 6 | 33.33 |
| Failure | 1 | 5.55 |

There were no postoperative complications and we did not implant an artificial urinary sphincter. Sphincterotomy was not performed. Mucus problem was solved by bladder irrigation and oral ranitidin administration.

## Discussion

Clam ileocystoplasty is becoming a commonly used form of treatment in refractory urge incontinence [2]. Division of the detrusor muscle should abolish detrusor instability and there is no reason why insertion of the ileal segment should do so is not obvious.

Some authors use a segment of colon for enterocystoplasty [9, 10]. Ileum has a higher distensibility and a lower motor activity which is more compatible than those of the colon, which will generate high pressure contractions that might stimulate the detrusor resulting in urgency. Ileal surgery carries less complications than colonic surgery and finally a greater theoretic probability exists for cancer development in the colonic than in the ileal mucosa [1, 2]. Clam ileocystoplasty is an effective procedure with high success rates of up to 88% [11]. In the present study the total success rate was 72.33%.

Clam procedure has been performed in detrusor instability accompanying congenital myelodysplasia, hydromyelia, syringomyelia, sacral agenesia and spina bifida [11]. In the present study only one patient needed ISC who was paraplegic due to meningomyelocele.

In another study it was shown that clam procedure could be performed in patients over 15 with long nocturnal and diurnal enuresis. But in that study the success rate was low due to absence of detrusor instability in all of the patients [3]. In the present study we operated 5 patients over 30 diagnosed as having life long nocturnal diurnal enuresis with detrusor instability. We believe that except for detrusor instability, clam procedure should not be performed in patients with long diurnal and nocturnal enuresis.

Incisional hernia, diarrhoea, pulmonary embolism, peritonitis, prolonged ileus, deep venous thrombosis, urethral stricture, avulsed clam and pancreatitis have been observed as postoperative complications [5]. We used the Connell type suture technique for bowel, bladder anastomosis and there were no complications postoperatively.

It was shown that detrusor instability could still be demonstrated in over half of the patients after operation [12]. In another study detrusor instability persisted in 75%. However, 80% of these patients improved symptomatically [5]. In our study the persistence rate was 33.33%.

Since clam ileocystoplasty could be performed in a wide indication range with high success rates, it is a safe and effective procedure in urological practice.

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