

Prospective Randomised Study Of Stented Versus Unstented Mathieu Repair Of Hypospadias

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Citation

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Abstract

Aim: To undertake a prospective randomised study comparing outcome of Mathieu hypospadias repair in patients with and without stents

Methods: Patients suitable for Mathieu repair of hypospadias constituted our patient population. Patients were randomised into the group with stent (group1) and the group without a stent(group2). Surgical procedure was the same in both where repair was carried out over a stent. The surgeon was unaware of the randomisation till the end of the operation. Those randomised to group 1 had the stent with dressing for 48hours. In group2, stent was removed in theatre, and no dressing was applied. Both groups received the same antibiotic cover. All were reviewed at 6weeks and 1 year. Duration of hospital stay, and results of surgery were assessed.

Results: 20 patients were entered in the study. 10 randomised into each group. 2 children in group 1(stented) had immediate post-operative problems related to the stent. None in either group had postoperative bleeding or urinary retention. No long term problems in terms of fistula, stricture or meatal stenosis were noted in either group.

Duration of hospital stay however was significantly different. Duration in hospital for those in group 1 exceeded that for ones in group 2 by an average of 31 hours

Conclusion: This study suggests that successful Mathieu hypospadias repair can be carried out without a stent, which itself has potential problems

The difference in duration of hospital stay and the cost however is statistically significant in the two groups. Unstented Mathieu hypospadias repair can be safely done as a day case procedure.

INTRODUCTION

Hypospadias is a common congenital anomaly where the urethral opening is on the ventral aspect of the glans or penile shaft. The incidence has been reported to be about 1 in 300 boys.

There are various degrees of severity depending on the position of the urethral meatus.

Various surgical techniques for repair of distal hypospadias have been described, the Mathieu procedure being one of them. Mathieu originally described his repair in 1932 which is a meatal-based flap urethroplasty and is used for repair of distal hypospadias.

Many surgeons have undertaken this repair either with or without urethral stents with varying degrees of success and

surgical outcomes.

All results and surgical outcomes however to our knowledge have been compared retrospectively.

We herewith report a prospective randomised controlled study of 20 cases of distal hypospadias presenting to one Consultant surgeon at the University Hospital of Wales between 2003-2004

MATERIALS AND METHODS

All patients with hypospadias suitable for Mathieu repair were included in the study. After informed consent these patients were randomly allocated to stented or unstented group. Prior ethical approval and statistical advice was sought. A total of 24 patients were found suitable for inclusion in the study. Parents of 3 patients refused to participate, hence were excluded. 1 other child was

unsuitable for inclusion as he was found to have significant chordee which needed correction and hence surgical procedure was modified. The remaining 20 were randomised into two groups, with stent (group1) and without a stent(group2).

All procedures were performed by the same surgeon on all 20 patients. Surgical procedure was exactly the same in both where repair of hypospadias was carried out using a meatal based flap. The repair was carried out using an 8Fr feeding tube as a urethral stent.

All were performed under GA with caudal block. The surgeon was unaware of the randomisation till the end of the operation.

Those randomised to group 1 had the stent with dressing for 48hours.

If randomised to group 2, stent was removed in theatre at the end and no dressing was applied.

Both groups of patients received the same antibiotic cover for 48 hours. Patients without stents were kept in until they passed urine twice postoperatively with good stream.

Patients with stents were kept for 48 hours following surgery after which the dressing and stent was removed. They were similarly discharged after passing urine twice.

All were reviewed at 6weeks and 1 year. Duration of hospital stay, readmissions and results of surgery in terms of evidence of fistula formation, meatal stenosis, cosmetic outcome and any untoward complications were recorded.

Results of both groups were compared and evaluated statistically.

Figure 1

Table 1: showing post-operative complications

Complications	Gr 1 (stented)	Gr 2 (unstented)
Immediate:		
Urinary retention	0	0
Blocked stent	1	0
Leakage around stent	1	0
Stent migration	0	0
Delayed:		
Fistula	0	0
Meatal stenosis	0	0
Urethral stricture	0	0
Meatal retraction	0	0

Figure 2

Table 2: showing duration of hospital stay

	Gr 1 (stented)	Gr 2 (unstented)
Average length of post-op hospital stay:	9 hours	40 hours

DISCUSSION

Various surgical techniques have been used for the repair of distal hypospadias with varying results. Mathieu described his operation in 1932. He initially performed the procedure without a stent.

Buson et al reported that stents were advantageous after repair₅,he reported a higher complication rate of 18.9% in stentless versus 4.6% in stented cases. Sheldon et al reported good results with minimal risk of fistula formation using stents while adding only minimal morbidity. Rabinowitz in 1987 described catheterless Mathieu hypospadias repair . He stated that since a watertight urethroplasty is performed without overlying suture lines, catheter drainage and urinary diversion may not be necessary₂.He reported excellent cosmetic and functional results.

McCormack and Wheeler also independently reported good results without stents. Hakim et al did a retrospective comparison of stented versus unstented repairs and found that successful repair was independent of use of stent_{3,4}.

Use of stents in Mathieu hypospadias repair has been a debatable issue and there have not been any prospective studies to our knowledge.Hence we opted to undertake this study. 10 patients in each group were predicted to be the number required to make a statistically significant difference to the duration of hospital stay.

In the present study, the immediate complication rate in the stented group was higher(20%) as compared to that in the unstented group(0%-)No cases of urinary retention were reported in either. None of the patients in this study developed a urethrocutaneous fistula or meatalstenosis.

However, there was a significant difference in the duration of hospital stay in either group. Patients in the stented group had an average duration of post-operative hospital stay of 40 hours.2 of the patients out of the group had problems with stent as mentioned earlier, hence stents were removed earlier shortening the hospital stay.The other 8 stayed for at least 48 hours postop.

The average postoperative hospital stay in those in the unstented group was 9 hours. Thus the duration of hospital

stay in the unstented group was significantly less than in the stented group. Patients in both groups had excellent functional results with low complication rates. We hereby have found that successful Mathieu hypospadias repair can be carried out without a stent. Stent in itself has potential problems and hence could be avoided.

The difference in duration of hospital stay and hence the cost however is statistically significant in the two groups in spite of the small patient population. Unstented Mathieu hypospadias repair can be safely done as a day case procedure.

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