

FACTORS INFLUENCING SUCCESS OF PERIURETHRAL INJECTION OF MACROPLASTIQUE

Hypothesis / aims of study

Periurethral injection of Macroplastique (PUI) is a well-recognised method of treatment for stress incontinence. The overall success rate is quoted to be about 60% with a cure rate of 40% (1). PUI has several advantages over other continence procedures. It is reliable, cost effective, has a short learning curve and can be done under local anaesthetic or under a short GA as a day case. In our unit it is indicated for elderly patients unfit for prolonged anaesthesia, those with voiding dysfunction, mild USI and patients who wish an interim procedure while completing their families. Out patient cohort is therefore diverse in terms of age, indication and cystometric diagnosis.

Our aim was to determine if age, menopausal status, urethral length, seniority of operator or underlying Detrusor Overactivity affects the outcome?

Study design, materials and methods

A retrospective audit of Macroplastique injections done between 2002-2007 was conducted. Case notes and completed Visual Analogue Score (VAS) questionnaires at 12 months post operative was obtained for 78 patients. Definition of cure was being completely dry and of improvement was a substantial reduction amount of leakage. Success was a combination of improvement and cure.

Results

The figures reported are the number (and percentage) of subjects in each group who with respective cure and success rates. Fisher's exact test was used to examine the difference in cure and success rates between groups of subjects

The overall cure rate is 23% (18/78) with a success rate of 71% (56/78). The success rate is maintained across all age groups as seen in table 1. The majority of patients were in the age group 50-69 years (48%) with equal representation in the <50 years (23%) and >70years (28%).

AGE N (%)	CURE RATE N (%)	SUCCESS RATE N (%)
<50 years 18 (23%)	2 (11%)	13 (72%)
50-69 years 38 (48%)	9 (23%)	28 (73%)
>70 years 22 (28%)	5 (22%)	15 (68%)
P-value	0.63	0.95

TABLE 1: CURE AND SUCCESS RATE ACROSS AGE GROUPS

Senior surgeons (consultants and associate specialists) achieved a cure rate of 12/53 (22%) and a success rate of 42/53 (79%) compared with middle grade surgeons (subspeciality trainees and specialist registrars) 7/23 (30%) and 16/23 (69%) respectively. Fisher's exact test gave p-values of 0.57 for cure rate, and 0.40 for success rate, indicating no significant effect of surgeon type for either outcome.

16 cases had a repeat procedure to enhance the results and 5 were cured, (i.e. 31%) with an overall success rate of 68% (13/16). All patients had cystometry prior to surgery and 62% (49/78) of the group had pure USI while the remaining 31% (29/78) had both USI and Detrusor Overactivity (DO). The cure and success rate was unaffected by the presence of DO as shown in table 2:

CYSTOMETRIC DIAGNOSIS	CURE RATE	SUCCESS RATE
USI only	10/49 (20%)	35/49 (71%)
USI + DO	8/29 (27%)	21/29 (71%)
P-value	0.58	1.00

TABLE 2: CURE AND SUCCESS RATES IN PURE USI AND MIXED INCONTINENCE

There was no significant difference between menopausal and premenopausal women for either outcome (Table 3) and this was irrespective of urethral length (Table 4).

	CURE RATE	SUCCESS RATE
Overall	23/78 (23%)	56/78 (71%)
Menopausal	15/55 (27%)	39/55 (70%)
Premenopausal	3/23 (13%)	17/23 (73%)
P-value	0.24	1.00

TABLE 3: OUTCOME IN PREMENOPAUSAL vs MENOPAUSAL PATIENTS

	Less than 28 mm		More than 28 mm	
	Cure	Success	Cure	Success
Overall	4/20 (20%)	14/20 (70%)	14/58 (24%)	44/58 (75%)
Menopausal	3/13 (23%)	8/13 (61%)	12/42 (28%)	31/42 (73%)
Premenopausal	1/7 (14%)	6/7 (85%)	2/16 (13%)	13/16 (81%)
P-value	1.00	0.35	0.31	0.74

TABLE 4: URETHRAL LENGTH AND MENOPAUSAL STATUS

Interpretation of results

PUI has similar cure and success rates across a wide range of age groups and this is independent of urethral length, menopausal status and pre-existing DO. It is a simple procedure to learn and the seniority of the surgeon made no difference to the outcome.

Concluding message

PUI Macroplastique is usually seen as the least appealing option for USI due to its relatively low reported success rates (60% compared with 85-90% for TVT/TOT procedures (2)). Our study has shown success rates of 71% across a diverse patient cohort. PUI Macroplastique may have lower success rates than other continence procedures but it is consistent in outcome across multiple variables such as age, anatomy, hormonal status and pre-existing DO. It is a viable interim option for young women with USI who wish to have more children and therefore would not be suitable for other continence procedures. It is ideal for the frail patient unsuitable for GA as well as the complex patient with mixed incontinence and voiding dysfunction.

References

1. Br J Urol. 1996 Nov;78(5):722-5
2. J Obstet Gynaecol. 2002 Sep;22(5):519-22.

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<i>Is this a clinical trial?</i>	No
<i>What were the subjects in the study?</i>	HUMAN
<i>Was this study approved by an ethics committee?</i>	Yes
<i>Specify Name of Ethics Committee</i>	North West London Ethical Committee
<i>Was the Declaration of Helsinki followed?</i>	Yes
<i>Was informed consent obtained from the patients?</i>	Yes