

CAUSES AND OUTCOME OF EXPLANTATIONS OF AMS 800 ARTIFICIAL URINARY SPHINCTERS ON MALES.

Hypothesis / aims of study

We reviewed the causes and the results of every local explantation after AMS 800 artificial urinary sphincter (AUS) placement on males for urinary incontinence in a university department over a ten year period.

Study design, materials and methods

All cases of complete or partial explantation of AMS 800 AUS between 1/1/2005 and 31/12/2015 were retrospectively reviewed. Causes of explantation were defined as erosion, infection and dys- or malfunction. Cases with both erosion and infection were classified as erosion. Intervals between implantation and re-intervention were defined as early (within 3 months), intermediate (3 months to 5 years) and late (after 5 years). Cases with only a surgical revision without partial or total explantation of the AUS were not considered. In order to identify factors of explantation, the statistical analysis compared only the explanted patients from our series versus the non explanted ones.

Results

Between 2005 and 2015, 36 patients have had a partial or complete explantation of a AMS 800 AUS, 27 coming from our series and 9 being referred.

During this period of time, 107 patients have had a first implantation of an AMS 800 AUS in our department, 19 a second implantation and 1 a third one. 17/107 of our new patients were explanted giving a rate of 16%.

In addition, 10/27 patients explanted during these 10 years have been implanted before 2005 (the oldest in 1993). The global rate of first explantation of our series is 22.5%, excluding patients referred from an other center.

Among 19 patients who have had a second implantation, 9 of them have had a second explantation (47%) and the one with a third implantation was finally explanted. If every cases of first and further explantations done in our department are considered, we have had a total of 37 explantations and 137 implantations, giving a rate of 27%. All together, the survival rate of AMS800 AUS implanted in our department at 5 years was 65%.

Causes of incontinence were post radical prostatectomy in 20 cases, post TURP in 6 cases plus 1 post Greenlight laser ablation, 7 for neurogenic bladder, 1 after neo bladder and 1 after external beam radiotherapy.

Among 36 explanted patients, causes of reintervention were : infection : 5 (early), 4 (intermediate) and 3 (late), erosion : 2, 8 and 4, and malfunction : 0, 3 and 7. 19/36 patients have had a second implantation (7 of them during the same procedure) including 5 patients with only a part (balloon or cuff) of the AUS reimplanted. Mean delay before explantation was 2167 days with a wide interval, 22 to 8030 days. Among 14 patients who have had explantation after a first implantation older than 5 years, only 5 have had a successful second implantation (3 non re-implanted and 6 failures with further explantation), giving a rate of 36% of success.

Causes of the 9 second explantations were 2 early infections, 2 intermediate erosion and one intermediate infection and 4 late dysfunction. The third explantation was due to an early erosion.

In a univariate analysis, previous radiotherapy, experience of the surgeon, previous explantation, late dysfunction cause and peno-scrotal route, were significant risk factors. Size of the cuff, age of the patient, delay before first implantation were not risk factors. In a multivariate analysis, only previous explantation was significant.

Interpretation of results

This is the first report of a single institution series on a long period of time. Rate of explantation varies from 16% to 27%, depending of the criteria of inclusion.

In this series, the main cause of early explantation was infection, erosion for intermediate explantation and malfunction for late explantation. After a second implantation, the rate of success was 53% and 45% in case of a late explantation.

In a historical meta-analysis published in 1999 (1), 2 600 men were studied. The rate of surgical revision was 30%, due to erosion in 11.7%, infection in 4.5% and malfunction in 13.8% of the cases.

In 2014, Linder et al (2) reported the Mayo Clinic series with a total of 704 patients and compared new patients (first implantation without revision)) with patients with a second implantation. The first group have had better results with 87/497 re-interventions vs 17/69. At 5 years, rates of AUS survival were identical in both groups (76% vs 68%)

In 2015, Ravier et al (3) reported 122 patients with a mean follow-up of 37 months and compared patients with or without previous adjuvant radiotherapy. Survival rate of AUS at 5 years was 66% for non irradiated patients vs 64% for those with previous radiotherapy.

Our series is the mean of these results, even if we have more late AUS dysfunctions due to a wider follow-up. We also have 6 AMS 800 AUS implanted more than ten years ago and still perfectly functioning. Cases of early infection should be avoided with a lot of precautions during the procedure. For intermediate and late infections, it is sometimes difficult to eliminate a microscopic erosion. Erosion was the main problem after a few years: it would be interesting to compare cases with and without preservation of peri-urethral muscles before placement of the cuff.

Concluding message

In this series, rate of reintervention for AMS 800 AUS seems to be similar than previously reported due to erosion, infection and late malfunction. Success rate of re-implantation after a first explantation for any reason leads to poor results with less than 1 out 2 patients with a functioning AUS.

References

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Disclosures

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