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Introduction

- Artificial urinary sphincters (AUS) remain the gold standard treatment for men with bothersome, refractory stress urinary incontinence (SUI)
- There is little real life data about the contemporary indications, outcomes and complications after AUS insertion
- The aim of this study was to investigate the medium to long term outcomes following primary AUS implantation in a UK tertiary referral centre

Methods and Materials

- Southmead Hospital has used the AMS800™ since its release in 1983
- All patients complete an ICIQ-MLUTS and undergo video urodynamics prior to AUS insertion
- Retrospective analysis of a prospectively maintained database of men undergoing AUS implantation between 2008 and 2021 was performed (Figure 1)
- Indications for surgery, mechanical and non-mechanical failure rates, patient satisfaction and the impact of radiotherapy on outcomes were analysed

Figure 1: AUS Insertions Performed

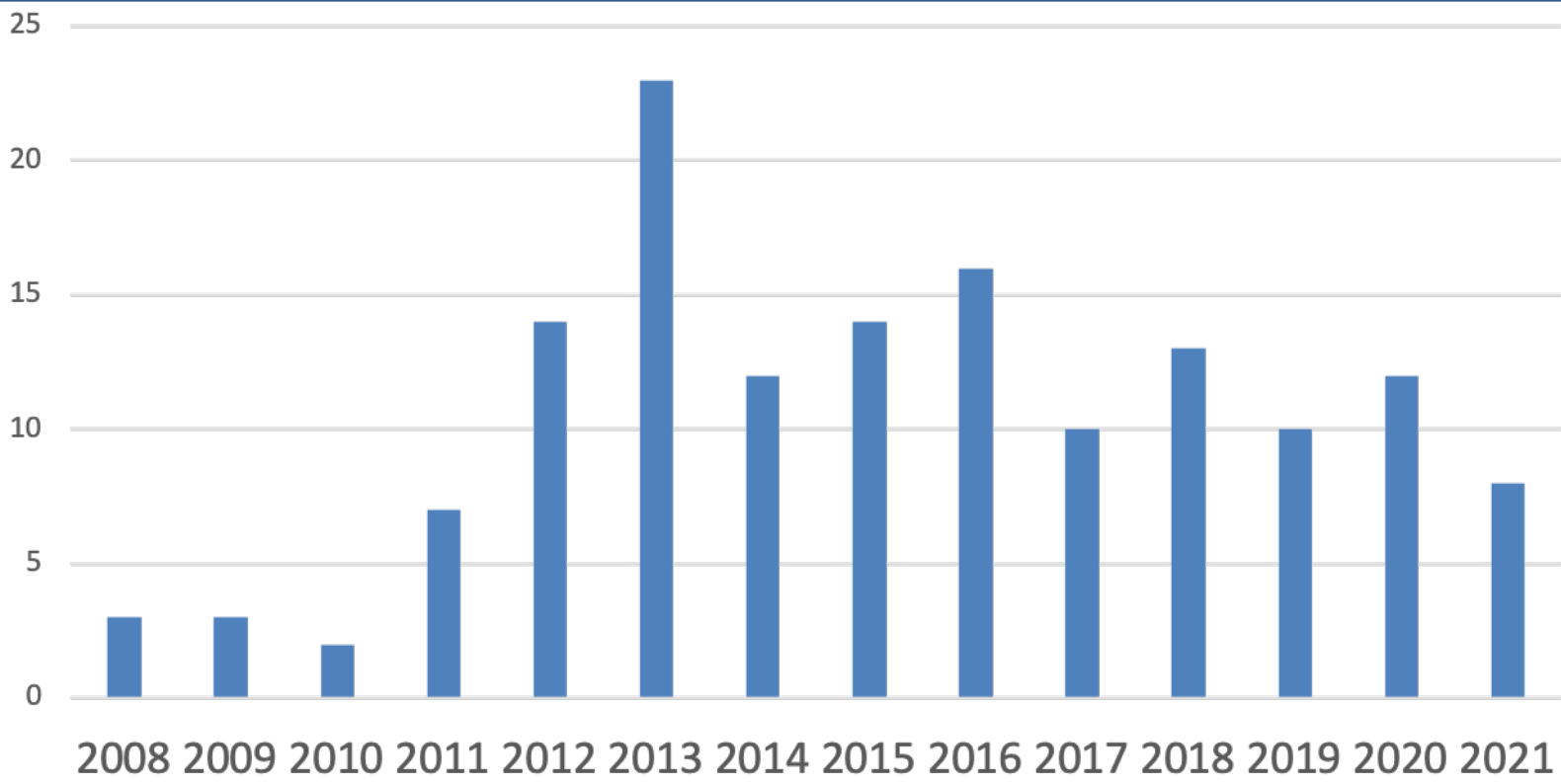


Figure 2: Reasons for Revision (n=20)

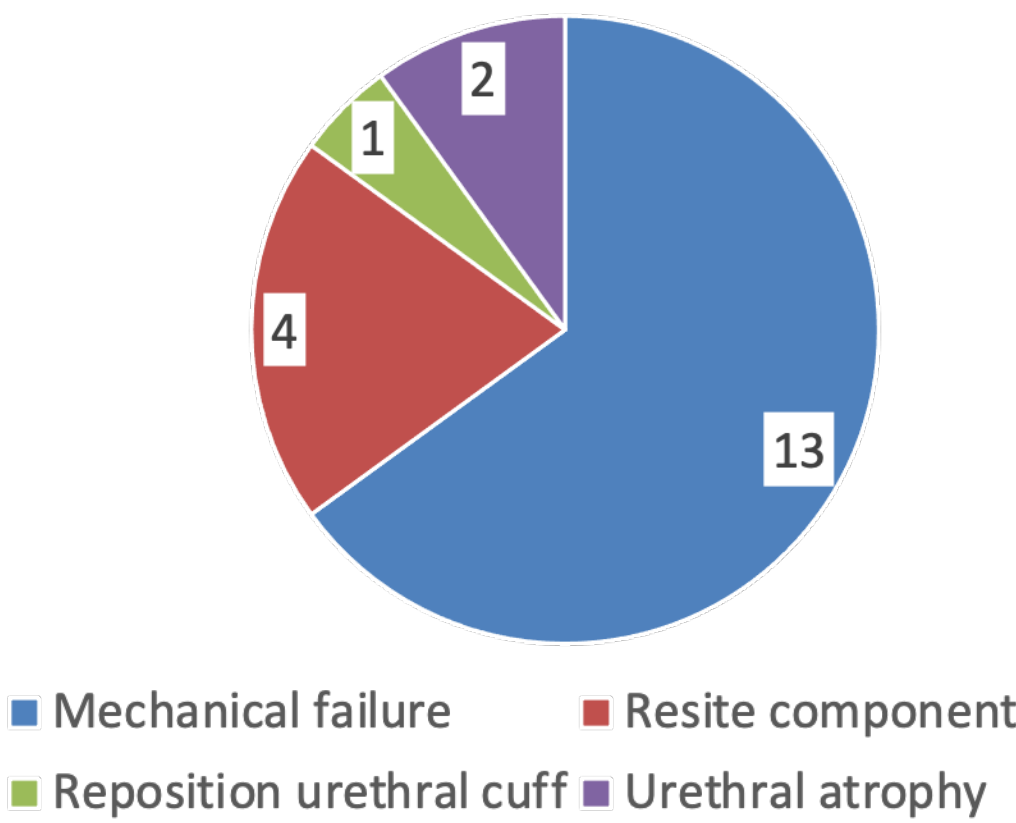
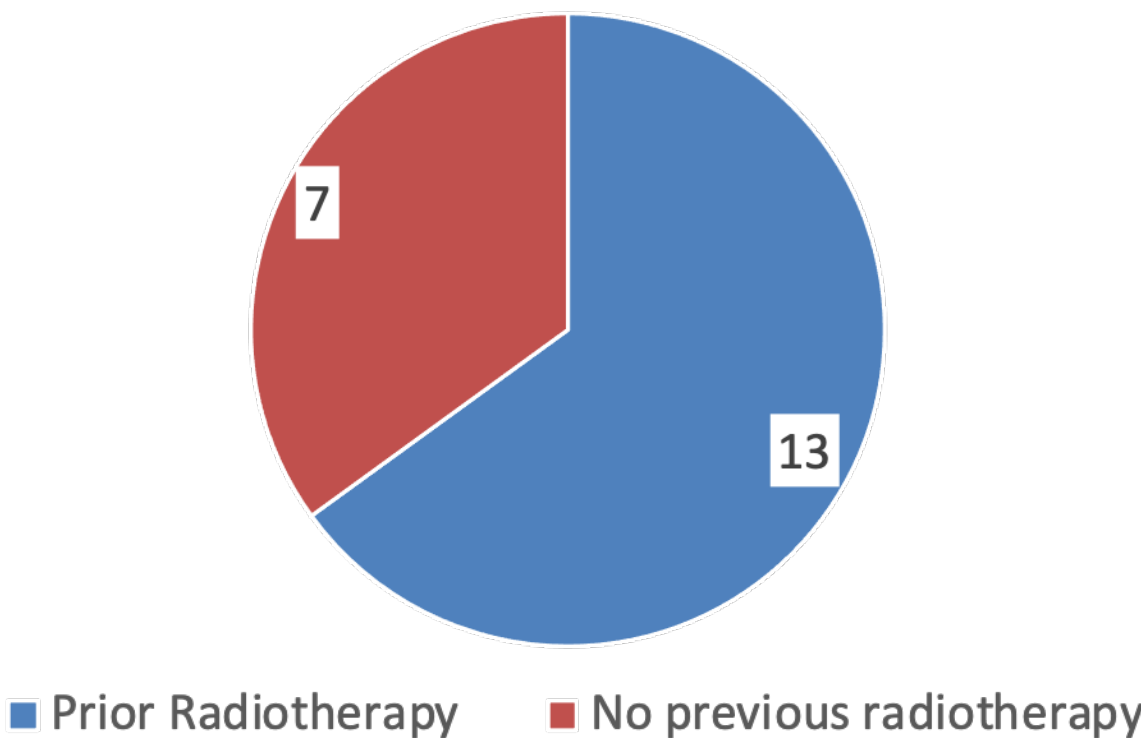


Figure 3: Impact of Radiotherapy on AUS Explantation (n=20)



Results

Demographics

- 147 patients, median age 69 years underwent AUS insertion
- Median BMI was 28, 82% had urodynamic SUI
- The commonest indication for AUS insertion was post radical prostatectomy incontinence - 88% (129/147).
- Median time to AUS implantation following prostatectomy was 4 years.
- 34% (50/147) of men received radiotherapy prior to sphincter insertion.
- Median follow-up was 6 years

Satisfaction

- In total 68% (100/147) patients were satisfied following AUS insertion.

Failure / Revision / Explantation

- There was a 27% (40/147) overall sphincter failure rate.
- Of these 20/40 patients required revision and 20/40 explantation
- Most,13/20 were revised for mechanical failure (Figure 2)
- Figure 2 illustrates reasons for revision.
- The median time to revision from implantation was 5.5 years.
- Only 2/20 patients required multiple revisions for mechanical failure.
- 20 patients required **explantation**
- 65% (13/20) had received prior radiotherapy.
- 85% (17/20) explanted due to urethral erosion
- Median time to explantation was 2 years.
- Other causes were infection and unrecognised urethral injury
- Eight patients had a second cuff placed via a transcorporal approach
- The majority (6/8) required further explantation due to recurrent urethral erosion.

Discussion

- In our AMS800™ implantation series we had a 73% sphincter survival rate at a median of 6 years follow up
- Our revision rate due to mechanical failure (14%) was in keeping with previous literature (2, 3, 4, 5)
- Urethral erosion was the primary cause of non-mechanical failure and subsequent AUS explantation.
- Previous radiotherapy was a significant risk factor regardless of the approach (perineal or transcorporal).

Conclusions

Overall, patients can be reassured that AUS implantation in contemporary practice is safe and durable with good medium to long term outcomes and high satisfaction rates.

References

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