

Suprapubic Catheter Insertion: A multi-centre mortality review

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Introduction

Suprapubic catheterisation (SPC), while performed in all age groups, is a well-recognised method of attaining urinary drainage in the elderly population. Whilst indications are varied, they can be categorised into **i)** bypassing obstruction, **ii)** continence control and **iii)** symptom control. Whilst complications of this procedure are well described and their risks quantified, there is a lack of regional, national and international data to demonstrate post-operative mortality rate. This audit represents the collaborative efforts of three NHS trusts in realising the mortality rate associated with suprapubic catheterisation.

Methods

Data were collected retrospectively for demographics (age, gender), medical co-morbidities (diabetes, obesity, neurological disorder, cognitive impairment), mortality and indication for procedure between the dates of 1st February 2018 and 1st February 2020 across three NHS trusts. Categories for data collection were agreed upon between contributing NHS trusts. Each site had a respective collaborator and supervising consultant responsible for collecting data. Multivariate regression analysis was undertaken to assess for correlation between mortality and collected data points. Welch's t-test was used when comparing categorical data.

Results

Datapoints for a total of 68 SPC insertions (48, 12 and 8 from their respective trusts) were collected. Two patients were excluded from analysis due to a lack of mortality and cognitive data. Total mortality was 10.4% (7/67 patients) at 1 year and 16.4% (11/67 patients) at 2 years. Two-year mortality was 10.3% and 21.6% respectively where age was <71 compared to ≥71, $p=0.07$ (Figure 1). Where clinical frailty score (CFS) was ≥3 versus where CFS <3, two-year mortality was 21% (6/28) and 13% (5/39), $p=0.80$ (Figure 2).

Multivariate regression analysis was performed and largely did not demonstrate an appreciable risk factor associated with suprapubic catheter mortality. Recurrent urinary tract infections (UTI) was associated with an increased 90-day mortality, $p=0.007$, however there is insufficient data to suggest the magnitude of mortality risk conferred from recurrent UTIs in the context of suprapubic catheterisation.

Results (Continued)

Figure 1: Frailty-related mortality post SPC insertion

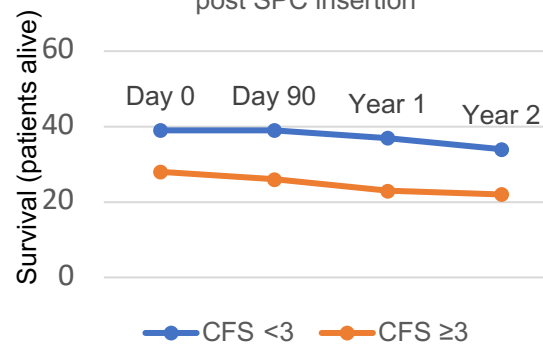
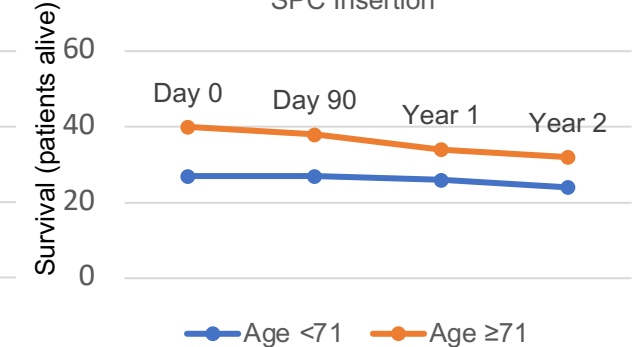


Figure 2: Age-related mortality post SPC Insertion



Conclusion

Indications for long-term SPC insertion can be divided into **i)** an alternative to per-urethral catheterisation for continence control or bladder dysfunction, and **ii)** patients requiring urethral or bladder outflow obstruction procedures who are unfit for extensive surgical procedures. Whilst optimising the quality of life and indeed urinary function is important to clinicians and their patients, providing high-quality data regarding risks associated with procedures should not be overlooked. The findings from this audit have contributed to the introduction of suprapubic catheterisation to the Model Hospital dashboard.

This audit has demonstrated both frailty and age to be associated with mortality after suprapubic catheterisation. Importantly, patients who underwent SPC insertion to alleviate the discomfort associated with natural progression of their neurological condition, were not associated with increased mortality. With further research involving larger datasets, clinicians will be able to empower patients, alongside their carers, to be better informed about the incidence of mortality and other consequences of SPC insertion.