

THE COVID STONES COLLABORATIVE: HOW HAS THE MANAGEMENT OF URETERIC STONES CHANGED DURING AND AFTER THE COVID-19 PANDEMIC?

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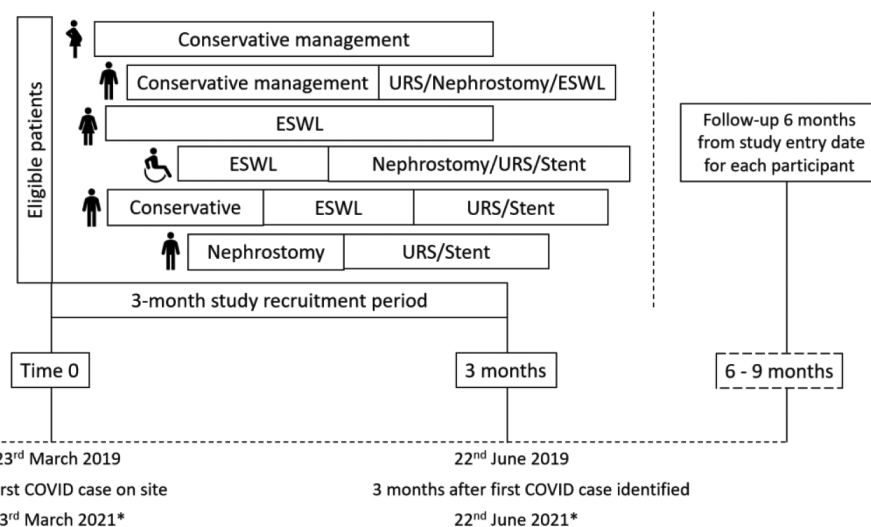
OBJECTIVES: To determine how management of ureteric stones has changed during and after the COVID-19 pandemic in the United Kingdom and whether this has affected patient outcomes.

BACKGROUND

- Urinary tract stone disease is a major clinical and economic health burden, accounting for over 85,000 hospital episodes per year in the United Kingdom
- The majority of ureteric stones will pass through urine spontaneously; however, some may require fragmentation either via ureteroscopic laser lithotripsy or extracorporeal shockwave lithotripsy. Emergency decompression (via a nephrostomy or stent insertion) is used to manage patients with infected obstructed systems owing to the associated morbidity such as sepsis.
- Results from a multicentre international study (COVIDSurg) indicate that perioperative infection with the SARS-CoV-2 virus is associated with an unselected 30-day mortality of 18.9%. Also, the cancellation of many elective procedures reduced attendances at emergency departments with non-COVID-19-related presentations means that the SARS-CoV-2 pandemic has resulted in worldwide disruption to healthcare provision.
- This study is a multicentre national cohort study which seeks to identify changes in the presentation, management, and outcomes of patients diagnosed with ureteric stones during and after the COVID-19 pandemic when compared to the pre-COVID-19 era.

METHODS

- **Inclusion criteria:** Adults (≥ 18 years old), presenting to the NHS services with a ureteric stone confirmed by a CT scan of their abdomen
- Three data collection periods (timing of 'post COVID' period may change depending on the prevalence of SARS-CoV-2 in the community and the restrictions imposed by the UK government at the time)
- Follow up of 6 months for each recruited patient to assess patient outcomes
- **Primary outcome measure:** Success of primary treatment modality determined by no additional treatment required for index ureteric stone.
- **Secondary outcome measures:**
 - Evaluation of rates of:
 - Nonoperative management
 - ESWL
 - Operative rate
 - JJ stent insertion
 - URS and laser lithotripsy
 - Percutaneous nephrolithotomy (PCNL)
 - Nephrostomy insertion
 - Hospital admission rates
 - Length of time till operative management from first presentation
 - Pulmonary complication rate
 - Admission to critical care (Level 2 or 3 care)
 - 30-day and 6-month mortality rate
 - Length of hospital stay
 - Readmission rate within 6 months
 - Type of anaesthesia for operative management options
 - Impact of index stone on baseline renal function
 - Complication rate if operative management was required
 - Adherence to NICE guidelines
- The Research Electronic Data Capture (REDCap) online software will be used as the platform of choice to collect and store data.
- The study will be reported according to the STROBE guidelines for observational studies.



HYPOTHESES:

1. Observation and ESWL are being used more frequently during COVID-19 than previously. This will result in higher rates of failed index intervention and subsequent re-presentation to hospital.
2. There will be an increase in the proportion of patients presenting with elevated creatinine/ acute kidney injury and sepsis due to patients' reluctance to attend emergency services during the pandemic and the subsequent delayed presentation.
3. There will be an increase in procedures performed under local or spinal anaesthesia, compared to general anaesthetics.
4. There will be a delay in time to initial and follow-up operative management.