# Clinical Procedure for the Management of Renal Colic

**Document Control:**

| | | | |
|---|---|---|---|
| **For Use In:** | Norfolk and Norwich University Hospitals (NNUH), James Paget University Hospital (JPUH) and The Queen Elizabeth Hospital King's Lynn (QEHKL). | | |
| | All clinical areas | | |
| **Search Keywords** | Stones, calculi, colic | | |
| **Document Author:** | Mr Hany Hussein, Urology specialty doctor<br>Miss Charlotte Dunford, Consultant urologist | | |
| **Document Owner:** | Norfolk and Waveney Urology Clinical Network Governance meeting. | | |
| **Approved By:** | Clinical Guidelines Assessment Panel | | |
| **Ratified By:** | Clinical Safety and Effectiveness Sub-board | | |
| **Approval Date:** | NNUH: 19th October 2024<br><br>QEHKL: 18th June 2024<br><br>JPUH: 18th June 2024 | **Date to be reviewed by:** This document remains current after this date but will be under review | 19th October 2027 |
| **Implementation Date:** | 19th October 2024 | | |
| **Reference Number:** | 16936 | | |

**Version History:**

| Version | Date | Author | Reason/Change |
|---|---|---|---|
| V.1 | 10/12/2019 | Neil Burgess | To originate document |
| V1.1 | 27/07/2020 | Melissa Gabriel | Monitoring compliance wording added. |
| V2 | 18/06/2024 | Hany Hussein | Acute stones pathway added. Reformatting as per new trust template requirements. |

**Previous Titles for this Document:**

| Previous Title/Amalgamated Titles | Date Revised |
|---|---|
| Joint Trust Clinical Procedure for Renal Tract Calculi - Renal Colic | 18th June 2024 |

## Distribution Control

Printed copies of this document should be considered out of date. The most up to date version is available from the Trust Intranet.

## Consultation

The following were consulted during the development of this document:

- Miss Charlotte Dunford, Consultant Urologist (NNUH)
- Mr. William Finch, Consultant Urologist (NNUH)
- Mr. Petre Ilie, Consultant Urologist (QEHKL)
- Mr. David Manson-Bahr, Consultant Urologist (JPUH)

## Monitoring and Review of Procedural Document

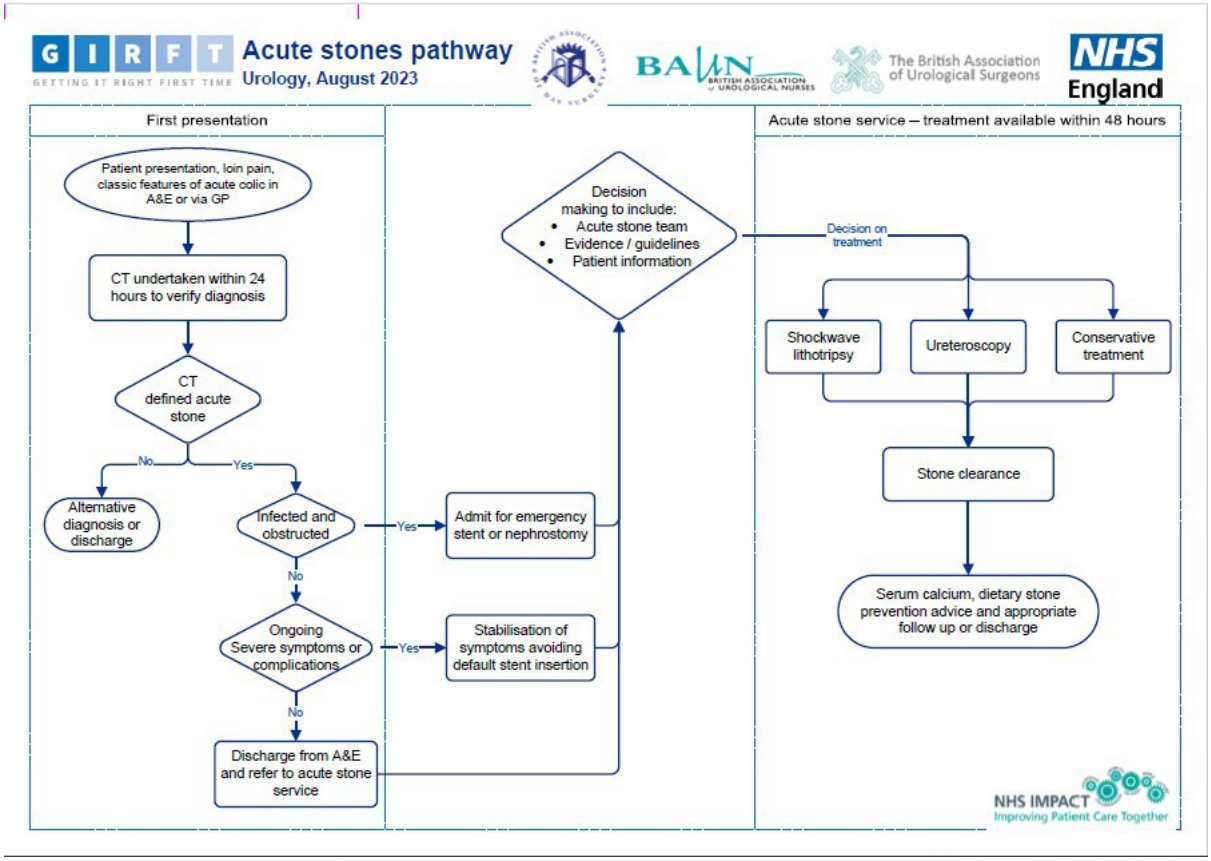
The document owner is responsible for monitoring and reviewing the effectiveness of this Procedural Document. This review is continuous however as a minimum will be achieved at the point this procedural document requires a review e.g. changes in legislation, findings from incidents or document expiry.

## Relationship of this document to other procedural documents

This document is a clinical guideline applicable to Norfolk and Norwich University Hospitals (NNUH), James Paget University Hospital (JPUH) and The Queen Elizabeth Hospital King's Lynn (QEHKL); please refer to local Trust's procedural documents for further guidance.

## Contents Page

**Quick reference**



## 1. Introduction

### 1.1. Rationale

Renal colic, characterized by excruciating flank pain, is one of the most common presentations of urinary tract calculi, these stones are formed due to the accumulation of crystalized substances in the urinary tract. Renal colic is often associated with significant distress and impaired quality of life for affected individuals. Therefore, efficient management strategies are crucial to alleviate pain, facilitate stone passage, and prevent complications.

The management of renal colic caused by renal tract calculi requires a comprehensive approach that addresses pain relief, stone passage, and preventive measures against recurrence. This involves a combination of pharmacological interventions, non-invasive procedures, and, in certain cases, surgical interventions. The choice of treatment depends on various factors such as the size and location of the stone, patient symptoms, and overall health status.

### 1.2. Objective

This guidance has been created to provide healthcare providers with a systematic approach to identifying, assessment and management of renal colic caused by renal tract calculi in accordance with current evidence based clinical practice. Standardised care practices have been developed to enhance patient safety with a resultant improvement in overall outcomes. Additionally, will delve into the role of minimally invasive procedures and surgical interventions in cases where conservative measures fail or are contraindicated.

### 1.3. Scope

This guidance applies to all adult patients over 18 years of age with renal colic caused by renal tract calculi presented to the A&E or referred from GP with renal colic pain.

### 1.4. Glossary

The following terms and abbreviations have been used within this document:

| Term | Definition |
|---|---|
| MET | Medical expulsive therapy |
| SIRS | Systemic inflammatory response syndrome |
| KUB | Kidney, ureter and bladder |
| MDT | Multidisciplinary meeting |
| U&Es | Urea and Electrolytes |
| CRP | C-Reactive protein |
| FBC | Full blood count |

## 2. Responsibilities

All medical staff and allied healthcare professionals involved in the care of patients presented with renal colic should be aware of the recommendations contained in this guidance. Staff must always ensure they have proper training and competency for effective diagnosis and management of renal colic which is vital for patient safety and to prevent complications.

## 3. Policy Principles

### 3.1. Assessment

#### 3.1.1. Incidence

- Urinary tract stones account for up to 25% of emergency admissions to urology departments.
- It is estimated that 12% of men and 6% of women will have one episode of renal colic in their life, with incidence peaking between 40-60 years for men and late 20s for women.

#### 3.1.2. Risk Factors

- Risk factors include dehydration, obesity, Change in urine PH, positive family history, hypertension, gout, hyperparathyroidism, urinary tract anatomical anomalies, diuretics, calcium/vitamin D supplements, chronic metabolic acidosis, cystinuria, low urine citrate, hot climates, higher socioeconomic groups, previous stone disease, inflammatory bowel disease, short bowel syndrome and excessive dietary intake of oxalate, urate, sodium and animal protein.

#### 3.1.3. History

- Renal or ureteric colic is characterized by an abrupt onset of severe unilateral abdominal pain originating in the loin and radiating to the groin.
- The pain typically lasts minutes to hours and occurs in spasms (with intervals of no pain or dull ache). Pain is often associated with nausea, vomiting and haematuria.
- The person may complain of dysuria, urinary frequency, and straining (due to stone irritating the detrusor muscle when it reaches the vesico-ureteric junction).

#### 3.1.4. Investigations

- Urinalysis - non-visible haematuria on dipstick
- Urinalysis - MSU and pregnancy testing in females.
- Bloods - U&Es, FBC, CRP, urate, calcium, and clotting screen in case nephrostomy would be needed.
- Blood cultures if the patient is pyrexial >38°C, has signs of Systemic Inflammatory Response Syndrome (SIRS) or sepsis.
- Urgent (within 24 hours of presentation) imaging should be offered. Low dose non- contrast CT (CT KUB) for most of adults; Ultrasound scan or pregnant women, children, or young people.

### 3.2. Management

#### 3.2.1. Initial management

- Analgesia: Non-steroidal anti-inflammatory per rectum e.g. Diclofenac 50-100mg, and/or IV paracetamol 1g, supplemented as necessary with an oral opiate e.g. Oramorph or parenteral if vomiting.
- Anti-emetic e.g. Ondansetron 4 – 8mg
- IV Fluids if unable to maintain sufficient oral intake.
- Patients should not routinely be commenced on Medical Expulsive Therapy (MET).
- If a ureteric stone is detected on NCCT, it is not necessary to treat every ureteric stone as the chance of spontaneous passage is in almost 75% of stones less than 5mm and 62% of stones 5mm or more as per MIMIC study (A Multi-centre Cohort Study Evaluating the role of Inflammatory Markers in Patient's Presenting with Acute Ureteric Colic)

#### 3.2.2. Immediate hospital admission should be arranged for patient if:

- The person has signs of systemic infection (fever/rigors) or sepsis.
- The person is at increased risk of acute kidney injury for example, if they have pre-existing chronic kidney disease or a solitary kidney or bilateral obstructing stones are suspected.

#### 3.2.3. Management – No sepsis

- Patients with a ureteric calculus should be offered conservative management providing:
    - There is no evidence of sepsis.
    - Renal function is not acutely impaired.
    - The ureteric stone is unilateral.
    - There is normal contralateral renal unit.
    - The pain is well controlled with oral and/or per rectum analgesia.
    - Adequate pain relief for use at home has been provided.
    - An electronic stone Multidisciplinary Team (MDT) referral (on ICE) has been made.
- If a patient requires primary treatment for their ureteric stone this should be undertaken within 48 h of the decision to intervene, primary treatment options include:
    - Shock wave lithotripsy (Hot Lithotripsy)
    - Insertion of ureteric stent (if there is no access for primary ureteroscopy)
    - Primary ureteroscopy

#### 3.2.4. Management – Sepsis

- A patient with sepsis and an obstructing ureteric stone should undergo urgent decompression with a nephrostomy tube or a stent. This should be performed with broad spectrum antibiotic cover and undertaken within 12 hours, although in some patients it will need to be performed more urgently.

### 3.3. Follow Up

- All patients presenting with an acute stone episode need to be referred to the stone MDT with completion of the stone MDT referral form on ICE. And then to be offered a management and follow up plan by the stone team.
- If patients are listed for ureteroscopy with a ureteric stent in situ this surgery should be undertaken within four weeks to minimise patient morbidity.
- Provide these patients with a leaflet explaining stent symptoms and ureteroscopy for stone prior to discharge.

## 4. Monitoring Compliance

Compliance with the process will be monitored through the following:
To ensure that this document is compliant with the above standards any adverse outcomes will be entered onto Datix and reviewed by the Departmental Governance Team who will ensure that these are investigated and are discussed at relevant governance meetings to review the results and make recommendations for further action.

## 5. Appendices

There are no appendices for this document.

**6. Equality Impact Assessment (EIA)**

| | |
|---|---|
| **Type of function or policy** | Existing |

| | | | |
|---|---|---|---|
| **Division** | Surgical | **Department** | Urology |
| **Name of person completing form** | Hany Hussein | **Date** | 18/06/2024 |

| Equality Area | Potential<br><br>Negative Impact | Impact<br><br>Positive Impact | Which groups are affected | Full Impact Assessment Required YES/NO |
|---|---|---|---|---|
| Race | None | None | NA | No |
| Pregnancy & Maternity | None | None | NA | No |
| Disability | None | None | NA | No |
| Religion and beliefs | None | None | NA | No |
| Sex | None | None | NA | No |
| Gender reassignment | None | None | NA | No |
| Sexual Orientation | None | None | NA | No |
| Age | None | None | NA | No |
| Marriage & Civil Partnership | None | None | NA | No |
| **EDS2 – How does this change impact the Equality and Diversity Strategic plan (contact HR or see EDS2 plan)?** | No | | | |

- **A full assessment will only be required if: The impact is potentially discriminatory under the general equality duty**
- **Any groups of patients/staff/visitors or communities could be potentially disadvantaged by the policy or function/service**
- **The policy or function/service is assessed to be of high significance**

**IF IN DOUBT A FULL IMPACT ASSESSMENT FORM IS REQUIRED**

**The review of the existing policy re-affirms the rights of all groups and clarifies the individual, managerial and organisational responsibilities in line with statutory and best practice guidance.**