Clinical Procedure for the Management of Fournier's Gangrene

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		
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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	Reformatting as per new trust template requirements.

Previous Titles for this Document:

Previous Title/Amalgamated Titles	Date Revised
None	Not applicable

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Printed copies of this document should be considered out of date.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.

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1. Introduction

1.1. Rationale

Fournier's gangrene is a rare but potentially life-threatening, rapidly progressive necrotizing fasciitis affecting the deep and superficial tissues of the genital, perineal, and perianal regions. This aggressive infection rapidly progresses, leading to tissue necrosis, systemic toxicity, and, if left untreated, can result in significant morbidity and mortality.

Managing Fournier's gangrene requires a multidisciplinary approach involving surgery, infectious disease management, wound care, and critical care interventions to enhance patient safety, standardizing care practices, and improving overall outcomes.

1.2. Objective

This guidance has been created to provide healthcare providers with a systematic approach to identifying, assessment and management of Fournier's gangrene in accordance with current evidence based clinical practice. Standardised care practices have been developed to effectively treat the infection, prevent complications, promote wound healing, and optimize overall patient outcomes.

1.3. Scope

This guidance applies to all adult patients over 18 years of age presenting with Fournier's gangrene.

1.4. Glossary

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

Term	Definition
HIV	Human Immunodeficiency Virus
AIDS	Acquired Immunodeficiency Syndrome
CXR	Chest X-ray
MSU	Mid-stream urine
U&Es	Urea and Electrolytes
CRP	C-Reactive protein
FBC	Full blood count
LFTs	Liver function tests

2. Responsibilities

All medical staff and allied healthcare professionals involved in the care of patients with Fournier's gangrene should be aware of the recommendations contained in this guidance. Staff must always ensure they have appropriate training and gained the necessary competencies before undertaking invasive procedures.

3. Policy Principles

Overall, joint care management in Fournier's gangrene involves a comprehensive approach aimed at controlling the infection, promoting wound healing, maintaining function, and supporting the overall well-being of the patient. Collaboration among Urologists, general surgeons, plastic surgeons, microbiologists, wound care specialists, physical therapists, and other healthcare providers is key to optimizing outcomes for patients with this condition.

3.1. Assessment

3.1.i. Incidence

- All ages are affected although it is slightly more common > 50 years.
- Male: Female = 10:1.

3.1.ii. Risk Factors

These include malnutrition, diabetes (20-70%), chronic alcohol abuse, HIV/AIDS, malignant disease, liver cirrhosis, chronic renal failure, obesity, drug abuse, Chemotherapy, immunosuppression.

3.1.iii. Aetiology

Fournier's gangrene is classically polymicrobial implicating anaerobic and aerobic synergy. The microbial invasion of the subcutaneous tissues commonly occurs either through external trauma or direct spread from a perforated viscus such as the rectum or anus, or genitourinary organ. Bacteria then track subcutaneously producing endo- and exotoxins, progressing to an inflammatory response that spreads to the fascia, with resultant obliterative endarteritis, thrombosis of the cutaneous and subcutaneous vessels, and tissue necrosis.

3.1.iv. Presentation

This condition is a true surgical emergency and requires rapid assessment and aggressive medical and surgical treatment. The scrotal / perineal skin and subcutaneous tissues will be tender, swollen, and this swelling can be rapidly progressive. There may be areas of skin necrosis (which appear black), and this is often apparent on the posterior surface of the scrotum. In addition, there may be palpable crepitus (because of gas produced by bacteria in the soft tissues of the scrotum).

3.1.v. Examination

Perform a digital rectal examination, complete inspection of the perineum and all the scrotal skin (including the back of the scrotum).

3.1.vi. Investigations

- ECG. CXR.
- Urine analysis. MSU for C&S.
- Bloods: U+E's, LFT's FBC, CRP.
- Clotting screen and Cross match 2 units of blood.
- Blood cultures.
- Arterial blood gas.
- CT scan Abdomen / Pelvis with contrast to determine disease extent / potential aetiology (the most sensitive and specific form of imaging in diagnosing Fournier's gangrene)

- **In cases where the diagnosis is clear, and the patient is unstable or septic, surgical treatment should begin immediately and not wait for confirmatory imaging or laboratory diagnostics.**

3.2. Management

- Regular observations / Haemodynamic support.
- Liaison with critical care outreach team.
- Monitor and stabilise blood sugars (if diabetic).
- Intravenous fluids and broad-spectrum antibiotics (discuss with Microbiology).
- Consider an anti-fungal agent if patient diabetic or immunocompromised.
- Keep patient nil by mouth and book onto emergency theatre list.
- Liaison with plastic surgery and general surgery (as a colostomy may be required).
- Radical, extensive surgical debridement by surgeons experienced with this serious condition.
- The testicles have a separate blood supply through the spermatic cord, so they are typically unaffected, even if extensive scrotal involvement is present.
- Surgical debridement often takes place in stages.
- Following surgical debridement and the formation of granulation tissue, patients will need to undergo reconstructive surgery of the affected area.

3.3. Follow Up

The patient may require regular return visits to the operating theatre for further wound examination, debridement as necessary and wound dressing within 48 – 72 hours. Skin grafts may be required by plastic team if it is considered the wound cannot heal fully by secondary intention.

4. Monitoring Compliance

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 Negative Impact**	**Impact 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.