Nursing management of necrotising fasciitis

Necrotising fasciitis is a soft tissue infection that causes necrosis of fascia (connective tissue surrounding muscle) and subcutaneous tissue, but spares skin and muscle in the initial stages of the infection (Callender 1992). It is a bacterial infection most often caused by a combination of two or more bacteria, of which Group A streptococcus is the most commonly identified. This is known as polymicrobial infection. If a single bacteria is the cause, it is known as monomicrobial necrotising fasciitis. Other bacteria identified as causing this infection include Staphylococcus aureus, bacteroides, clostridium, pseudomonas and prevotella. Combinations of these bacteria cause polymicrobial necrotising fasciitis.

This infection is defined as: ‘decaying infection of the fascia, the sheets of connective tissue surrounding the muscles’ (Roemmele and Batdorff 2000). It can spread alarmingly quickly, sometimes between 3 and 5cm per hour. This has resulted in sensations of impending doom, which have led to extreme reactions from relatives at the mention of the disease (Morgan 1998).

Necrotising fasciitis can occur at any age or location and is not gender specific. However, certain groups appear to be at more at risk. These include people with diabetes mellitus, atherosclerosis, chronic renal failure, obesity, immunosuppression and malnutrition. Callender (1992) suggests that all these factors influence survival rates, and although he offers no evidence to support this, it is not unreasonable to expect these conditions to weaken a person’s defence against infection. Therefore, older people and the very young might also be at increased risk, although no figures could be found to confirm this.

A literature search produced few articles on necrotising fasciitis that offer adequate guidance for nurses caring for patients with this condition. It is rarely mentioned in nursing texts, apart from the occasional single sentence description. Journal articles tend to focus on case studies (for example, Ardire and Mrowczynski 1997, Cunningham et al 2001, Freeman et al 1997). The author’s interest was stimulated by a suspected case of necrotising fasciitis on the ward where she worked. The patient and relatives’ initial reaction to the mention of necrotising fasciitis was one of shock and horror, which arose from the information provided by newspaper reports. The author undertook a literature search to increase her knowledge in this area and allay the fears of the patient and family.

**Summary**

Necrotising fasciitis is a soft tissue infection often caused by two or more bacteria, most commonly Group A streptococcus bacteria. This article provides an overview of the symptoms, treatment and nursing care of patients with necrotising fasciitis. Psychosocial considerations, public perceptions, consent and advocacy are also discussed.

**Symptoms**

The symptoms of necrotising fasciitis are many and varied, and have been divided into three categories (Roemmele and Batdorff 2000):

- **Early symptoms.**
- **Advanced symptoms.**
- **Critical symptoms.**

These categories provide a logical way of tracking the course of the infection. The symptoms listed in Box 1 are widely recognised and accepted as typical of necrotising fasciitis.

All these symptoms can, however, be attributed to other causes and therefore necrotising fasciitis is not usually the first diagnosis medical staff will make. Many patients, especially those with flu-like symptoms, are sent home with general advice: for example, getting plenty of rest and taking an antipyretic to reduce their temperature. Some patients return two to three days later with worsening symptoms, but as can be seen by the timescale in Box 1, this delay in diagnosis can be vital to treatment. Callender (1992) states that: ‘A delay of greater than 24 hours is associated with a much higher mortality rate (70 per cent) than patients treated in less than 24 hours (36 per cent).’ This highlights the importance of early diagnosis and treatment. Necrotising fasciitis is relatively rare, between one and five cases per 100,000 people per annum. It is important, therefore, that health professionals are educated in recognising and diagnosing the condition so that an early diagnosis is made.

**Box 1**

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**Key words**

- Bacterial infection
- Nursing: management
- Wound care

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Diagnosis and treatment

Early diagnosis is essential so that treatment can begin as soon as possible. Childs (1998) states that ‘The best treatment is early recognition and diagnosis.’ An early diagnosis will lead to a better chance of survival, but as necrotising fasciitis is not usually suspected immediately, a delay is often inevitable. The patient might become critically ill before a diagnosis is made. By this time, treatment is more complicated and less likely to be effective. Diagnostic evaluations used in diagnosing necrotising fasciitis are outlined in Box 2.

The most important aspects of care in patients with necrotising fasciitis are early recognition and correction of metabolic abnormalities, broad-spectrum antibiotic coverage and early, radical debridement of all necrotic tissue (Callender 1992). These three areas form the basis of the immediate treatment. Surgical debridement removes the dead tissue. In conjunction with intravenous antibiotics, this prevents further spread of infection. Initially, the patient is started on broad-spectrum antibiotics. Once the results of laboratory tests are available, the choice of antibiotic can be made more specific to the cause of the infection. Commonly used antibiotics include penicillin, clindamycin and metronidazole. These are often used in combination until the test results become available.

Nursing care

The nursing care of patients with necrotising fasciitis is multifaceted, and requires a multidisciplinary approach. Each member of the team has his or her specialist area of knowledge and skills; an important role of the nurse is the co-ordination of these team members. Following diagnosis, initial care of the patient will focus on safe administration of prescribed medications and preparing the patient for theatre. All medication must be correctly prescribed by medical staff, but it is the nurse’s responsibility to ensure administration is carried out in accordance with the Standards for the Administration of Medicines (UKCC 1992). Information about medication can be obtained from the manufacturer’s leaflets or the pharmacist. In addition, NHS trusts require nurses to attend study days on the administration of intravenous medication.

Nursing care should focus on regular assessment of the patient’s condition. Aids to this include regular monitoring of observations, including temperature, pulse, respirations, blood pressure and oxygen saturations. Arterial blood gases should be measured within the first 24 hours of admission and repeated when appropriate. The patient should be closely monitored and all fluid losses accurately recorded and hourly urine output measured. Urinary catheters should be inserted and the results charted. Intra-arterial lines should be used if required. Pressure area care should be carried out to maintain the integrity of unaffected skin. Wound care should be carried out to the affected area, with input from both the infection control nurse and the specialist tissue viability nurse. Wound care will vary for each patient. Patients should be assessed individually and care planned and implemented according to their needs. Regular evaluation should be carried out as the patient’s needs might change, especially after surgery.

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Advocacy

Gates (1994) defines advocacy as: ‘The process of befriending and, where necessary, representing a patient, client, partner or protégé in all matters where the nurse’s help is needed, in order to protect the rights or promote the interests of that person’. The nurse’s role as advocate is an extremely important one when caring for a patient with necrotising fasciitis. There are many facets to the nursing care of such patients, and the author suggests that by co-ordinating the multidisciplinary team and overseeing their involvement, he or she is acting as patient advocate by ensuring that the patient receives the best possible care.

The role of advocate will vary according to the severity of the patient’s condition and will change throughout the course of the illness. In newly diagnosed patients, information giving and education is important. As the patient’s condition deteriorates, the role will change to one of acting on his or her behalf to ensure care is delivered to a high standard and patient dignity is maintained. For example, while the author acknowledges the need for education, a balance must be struck between the patient’s needs and the educational needs of medical and nursing students. A critically ill patient who is in great pain will not be helped by a succession of people examining him or her. Frequent visits by...
different people also pose an infection control risk. Therefore, the patient’s advocate in this case would limit the number of students examining the patient, thus maintaining their privacy and dignity. The role of advocate might make you unpopular with other health professionals, but explaining the reasons behind these decisions usually means that they will be accepted.

Consent

Consent to treatment is also an issue when caring for the patient with necrotising fasciitis. Under normal circumstances, no operation would go ahead without the patient’s consent. However, patients with this condition might not be able to give consent if they are in a critical condition, and consent by the next of kin is not legally acceptable. However, acting out of necessity to save the patient’s life, the surgeon is justified in operating provided he or she only does what is necessary to save life. For example, the surgeon should not carry out surgical debridement or amputation above and beyond what is absolutely necessary. Obtaining consent can be difficult even from a competent person because it is not always apparent how extensive the surgery is likely to be until the patient is in theatre. In this case the surgeon may proceed: ‘on the grounds that if [the patient] were conscious he would probably consent to his life being saved in this way’ (Mason and McCall Smith 1999). Further information on consent is provided in the document Good Practice in Consent Implementation Guide: Consent to Examination or Treatment (DoH 2001).

Psychosocial considerations

A diagnosis of necrotising fasciitis, which results in a long hospital stay and several months of rehabilitation, can have many psychosocial effects. Prolonged illness can have serious financial implications for the family, especially if the main wage earner becomes ill. These effects can be permanent if, for example, the patient loses his or her job because of an amputation which prevents a return to previous employment. If the patient dies the financial implications for the family might be great. If he or she recovers, extensive alterations to the home might be required to help cope with disability. These might be costly and disruptive. His or her social life might also be affected. Previous activities might no longer be possible, and because of the public perception of necrotising fasciitis, friends might be reluctant to visit. The person might become increasingly...
Necrotising fasciitis is an aggressive and destruc-
tive disease, which has been labelled the ‘flesh-
eating bug’. Although this description provides an
eye-catching newspaper headline, it can provoke a
shocked reaction from the public. One such head-
line, ‘Dad beat flesh-eating killer’ (Morgan 1998),
caused near panic as the public immediately thought
any small injury would result in necrotising fasciitis.
This article falsely stated that the infection devel-
oped at a rate of one foot per hour. This informa-
tion was eventually amended to 3cm per hour in
a later story (Orders 2002).

The public perception was of vast amounts of
human flesh being eaten, leaving victims with mas-
sive deformities, if they survived. It is difficult to change
public opinion. When talking to relatives it is neces-
sary to strike a balance between the seriousness of
the disease and not over-dramatising its effects. It is,
however, important to answer questions truthfully.
Because this condition is rare, medical and nursing
staff might have limited experience in caring for such
patients. However, by increasing their knowledge of
necrotising fasciitis, nurses are better placed to edu-
cate relatives and nursing colleagues, and improve
the quality of nursing practice.

Conclusion
Necrotising fasciitis is a rare condition, which can
adversely affect the patient’s quality of life. It is a
very painful infection of rapid onset, which can
have serious long-term physical and psychological
effects on a patient. Patients and their families need
knowledgeable and sensitive care, especially in view
of sensational media reporting. Health profession-
als can address this issue and improve nursing care
by increasing their knowledge of necrotising fasci-
itis and passing on correct information to patients
and their relatives.

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