Delayed wound healing in patients with rheumatoid arthritis

Rheumatoid arthritis (RA) is an inflammatory disease that causes pain, swelling, stiffness, and loss of function in the joints. It occurs in a symmetrical pattern, which means that if one knee or hand is involved, the other is also (Box 1). It is a chronic, progressive, inflammatory tissue disorder of unknown origin and in addition to joint stiffness, ankylosis (fixation of a joint), and associated joint deformity, patients may have systemic involvement of the eyes, kidneys, chest, and lungs (Ryan, 1995).

It is thought that the autoimmune component of the disease can have significant multi-system effects, including scleritis (inflammation of the white of the eye, the sclera), pericarditis, pleural effusions, vasculitis (patchy inflammation of the walls of small blood vessels), and skin ulceration (Oliver and Mooney, 2002).

There is currently no cure for RA and care revolves around managing symptoms, preventing complications, and enabling patients to live as full a life as possible. Surgical intervention plays a part in the treatment plan for a minority of patients. Joint replacement is the most frequently performed surgery for RA, and its aim is to relieve pain, improve or preserve joint function, and improve the patient’s ability to perform daily activities. However, due to immunosuppression, wound healing can become a major problem and RA is commonly associated with poor healing.

Other common factors that inhibit wound healing also affect patients with RA, including diabetes, poor circulation, venous disease, immobility, dehydration or poor nutrition, and prolonged use of certain drugs such as steroids or immunosuppressives (Collier, 2003).

Nutrition and RA Nutrition is a basic human requirement, and physical and psychological well-being depend on it (Grieve and Finnie, 2002). Adequate nutrition is particularly important during ill health because of the central part it plays in recovery (Table 1).

A healing wound requires an adequate supply of blood and nutrients. Delayed healing is inevitable if the person’s diet is deficient in any way. Also, protein is lost if a wound is leaking exudate and this will have to be accounted for in the dietary intake.

Nutritional intake is affected by several variables including pain, immobility, economic factors, and psychological well-being (Casey, 1998).

The overwhelming feeling of fatigue experienced by people with RA increases the effort required to accomplish the basic mechanisms of eating to such an extent that dietary intake can be significantly impaired.

Meals may be missed or replaced by nutritionally deficient snacks (Ryan, 1995). There are other factors that impinge on nutrition. For example, the sensation of pain can lead to a loss of appetite and immobility. This inhibits the ability to shop, prepare food, and consume it. This in turn increases fatigue and a negative cycle ensues. A change in self-esteem may alter eating habits, leading to over-eating or under-eating to counter feelings of depression.

Pain, loss of strength, poor dexterity, and poor grip-strength inhibit the patient’s ability to handle eating utensils. Patients may be embarrassed about spilling food or drink when eating with others.

A multidisciplinary team approach is therefore needed to ensure patients are provided with appropriate utensils.

Mobility Patients may require admission to hospital for treatment of an active phase of their RA (described as a ‘flare’). Patients experience considerable pain and fatigue and as their joints are inflamed they may be unable to move independently. Restricted movement can be a particular problem in the morning due to stiffness and pain, and achieving a comfortable position can be difficult. These problems predispose the patient to the development of pressure ulcers.

It is important that patients are assessed for the risk of pressure ulcers on admission to hospital and in the community. The patient’s care plan should reflect the findings of the assessment and highlight the need for regular change of position and regular reassessment.

Pressure-relieving mattress and cushions may be required to aid comfort and reduce pressure.

Physiotherapists play a vital role in enabling patients to walk safely, maintain joint movement, and relieve stiffness. Methods of pain relief are listed in Box 2.

Patients’ medicines and wound healing The treatment for RA relies on suppressing the disease by using disease-modifying anti-rheumatic drugs (DMARDS), which are thought to act on the immune process.

DMARDS include sulfasalazine and methotrexate. Corticosteroids are also used (Arthritis Research Campaign, 2003). The toxic nature of many of these drugs means that frequent monitoring for possible side-effects is necessary. Additional treatment with non-steroidal anti-inflammatory drugs, analgesia, and injections of steroids into inflamed joints helps individuals to cope with pain and stiffness (Oliver, 2000).

Steroids Steroid treatments such as hydrocortisone and prednisolone, prescribed for the management of pain, can have an effect on wound healing.

REFERENCES
Holland, E. (1999) Researchers learn how stress slows wound healing. Columbus, OH: The Ohio State University. This is an online article that can be seen at: http://researchnews.osu.edu/archive/ll/wound.htm
Hydrocortisone and prednisolone stimulate the production of cortisol, which depresses the immune system. With a depressed immune system, the patient is vulnerable to bacterial and viral infections. Thinning of the skin is often a side-effect of taking steroids and the resultant delicate skin can bruise or tear easily. The thinning is due to a reduction of collagen and elastin, which normally provide support for blood vessels.

As the skin breaks down, a wound develops. Local infection cannot be contained and may spread rapidly (Griffiths and Jordan, 2002). Wound infections can lead to infections within the joints, leading to hospital admission and administration of high doses of intravenous antibiotics. Another side-effect of steroids is to stimulate appetite, which may lead to the patient gaining weight.

Some medicines, such as cytotoxic drugs, may cause mouth ulcers or a sore mouth. This may deter the patient from eating.

Stress Read et al (2001) recognised that RA is associated with stress because of the inability of individuals to carry out activities of living independently. Cole-King and Harding (2001) found a significant relationship between depression, anxiety and delayed wound healing. Their study, which involved 53 patients with leg wounds, found that delayed wound healing was four times more common in those experiencing anxiety and depression.

Scientists investigating why wounds heal more slowly in patients who are stressed have found that psychological stress can increase the levels of some hormones in the blood.

When levels of cortisol increase, it suppresses the immune response. It either reduces the number of neutrophils that move to the wound site or it controls the concentration of the cytokines necessary for healing (Holland, 1999).

**Conclusion** RA is a debilitating disease, which not only affects the patient but also their family and friends. Not only does the patient have RA, but they have additional factors that may limit or inhibit their ability to continue with activities of living due to mobility problems, pain, wounds, depression, and fatigue.

A multidisciplinary team approach is necessary to enable patients with RA to be as pain-free as possible. This will increase their mobility and enable them to continue with their normal routines.

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**REFERENCES**


