# Tissue infections from decubitus ulcers in a paraplegic patient: The cause for an amputation. Beware!

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### Abstract

A paraplegic patient was admitted for surgical treatment for necrosis and infections of the soft and bony tissues around the lower third of the crus down to the right foot. This mandated a below-knee amputation. During this procedure, there was a profuse bleeding from virtually every point of incision, even though his laboratory results were good enough before this procedure. This case may demonstrate that caution should be exercised during amputation procedures in paraplegic patients.

## INTRODUCTION

This is a case report on a 43-year-old male paraplegic patient who sustained a spinal cord injury 12 years earlier after a fall from a tree. The reason for admission into the surgical ward was that he had developed chronic dystrophic ulcers with necrosis and mass disfiguration of the distal 1/3 of the right crus down to the foot with infections touching virtully all the tissues of this area including the bones. The reason for this may have been lack of adequate nursing and rehabilitative care. On admission, the patient was in a good general clinical status with no fever, his humour was even good, too.

His clinical and laboratory data were as follows:

- Blood pressure 120/70mmHg, pulse 84/min, Whole Blood Count: WBC 8,300, RBC 5,000000, HTC 36.6%, HGB 11.2g/dl, MCV: 73.2fl, MCH 25.4pg, MCHC 32.6g/d, PLT 495,000u/l.
- Blood chemistry: Na: 145.2mmol/l, K: 4.9mmol/l, BUN: 29,4mg%
- Coagulogram: INR 1.18, Partial thromboplastin time (PTT) 38.6s, Prothrombine time 86%.
- Blood group: B, Rh(+), Blood sugar: 84mg%, Urine: no pathological findings were noted.

After an initial preparation with fluid infusions and an antibiotic coverage (Augmentin 1.2g iv) he had a subarachnoideal anaesthesia in the lumbar region and a below-knee amputation of the right crus was begun by forming the anterior and the posterior skin flaps. During the operation, I was very careful not to allow any excessive bleeding, but unfornately this was not possible to accomplish. Bleeding was profuse, but why?

The whole blood count after the operation was: WBC 7,800, RBC 3,470000, HBG 7.8g/dl, MCV 73.5fl, MCH 22.5pg, MCHC 30.6g/d, PLT 355000/ul.

This mandated a blood transfusion in this patient, he thus received 3 units of erythrocyte concentrate and 1 unit of FFP. He was discharged on the 8th post-operative day with good healing of the tissues and no infections.

### DISCUSSION

Patients with trauma disenabling them may need supportive or surgical managment to get through their ordeal. Rehabilitative and nursing care are vital in the maintenance of the intergrity of tissues under pressure. To avoid pressure ulcers and consequent tissue infections, such care is inevitable. Problems may arise when care is inadequate or unavailable. The consequenses of such negligence may be very serious. Pressure ulcer, tissue necrosis and infections pose a threat to quality of life and even death. In these cases, surgery may be a live-saving procedure.

This is why I have taken to present this case of my first paraplegic patient. What I observed was that there were abnormally wide blood vessels, especially cutaneous and subcutaneous vessels. No automatic vessel contraction was observed, bleeding came from virtually every point of our incisions even though I used a step by step cut-clamp-andligate technique. This was not natural and this was not how I foresaw this procedure. I have, over the years, amputated at different levels of the limbs in many patients. The majority of the patients were those with dysvascular diseases (over 65%). Over 30% had infections (diabetic patients) and less than 5% were other trauma patients (limb injuries, crushes, devitalized tissue).

In all these cases, the procedures were mostly uneventful, but for the first paraplegic patient of mine. Has anybody had such a case? I know that the neuro-vascular control was dysfunctioned, but do paraplegic patients bleed this way? I estimated that during and after the operation, the patient had lost about a litre of his blood whereas under nomal circumstances, it could have been between 100 and 250ml.

The usual mechanism of forming a decubitus ulcer is from pressure. However, it can also occur from friction by rubbing against something such as bed sheet, cast, brace etc. Any area of the tissue that lies just over the bone is more likely to develop a decubitus ulcer. These areas include the spine, coccyx, hip, heels, elbows and so on. These common areas of decubitus ulcer formation and prevention are basic nursing principles covered in the nursing school curriculum.

Prevention consists of changing body position every 2 hours or more frequently as obligatory. This 2-hour time frame is generally accepted as maximum interval that the tissue can tolerate pressure without damage. Prevention also consists of protection and padding to prevent tissue abrasion and maintaining hydration, nutrition, and hygiene (1,2,3,4).

### CONCLUSION

There was a lesson learnt in this case;

a) Blood-group typing and cross-matching should be reserved for such a paraplegic patient due for amputation even though the laboratory results were good enough before the procedure.

b) Never cut accross the tissues (as in dysvascular disease patients) more than you can handle to control bleeding.

c) Healing is more rapid in the paraplegic than in the diabetic or the arteriosclerotic patient.

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