Non-Transfusion orthopaedic Surgery in complicated fractures among Jehovah's witnesses in Calabar, Nigeria: Case report

A Udosen, M Inyama, A Etiuma, S Urom, Marwa, E Djunda

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Abstract

We report two cases of unusually complicated fractures in indigent Jehovah's witnesses that were treated at the university of Calabar teaching hospital without any form of blood transfusion.

CASE REPORTS

CASE ONE

A fifty-two year old male Jehovah witness presented to our facility with bilateral multisegmental fractures of the femur following a road traffic accident. After resuscitation and while plans were concluded on operative management of the fractures, patient left against medical advice. He reappeared two years later with multisegmental malunions and nonunions in both femurs. This time he came with severe hypertension (BP range 180/120-210/160). His haemoglobin was 7g/dl (PCV 29%) on admission but rose to 14 grams within 6 weeks of administering erythropoietin, dextran, and vitamin C. Patient also refused autologous transfusion. After the first open osteoclasis, reduction and plating his haemoglobin dropped to 7.5 g/dl and similar protocol of building up his haemoglobin was adopted before the second stage of operation. His major problems were:

1. Poverty; but for the help from members of the Jehovah witness congregation, he had no funds to carry out the least investigation (Urinalysis)
2. Anaemia
3. Faith-based refusal of blood transfusion
4. Severe hypertension
5. Ankylosis of right knee joint
6. Osteoporosis
7. Complications of fractures comprising of multiple nonunion and malunion as shown below:

Figure 1

Figure 1: Nonunion proximal and malunion midshaft and supracondyle of left femur

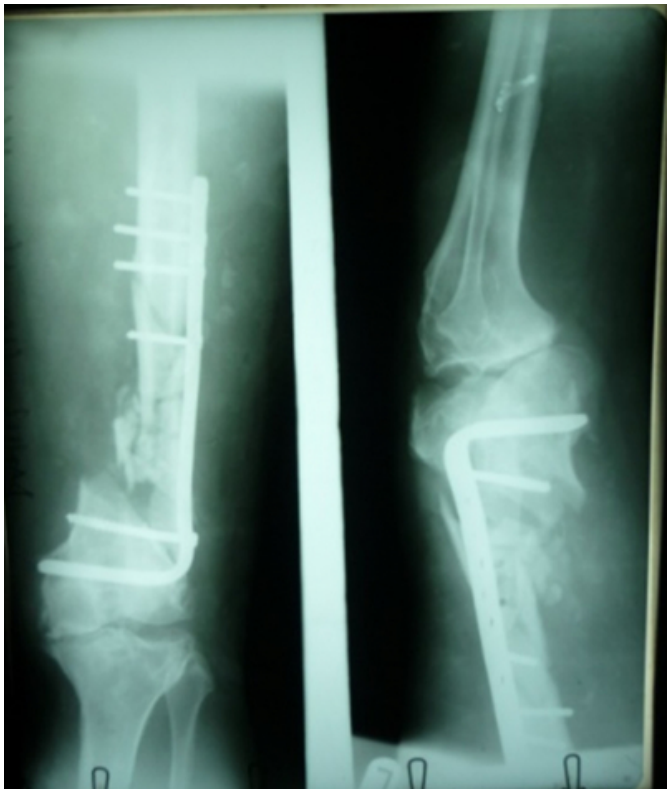
Figure 2

Figure 2: Pseudoarthosis/malunion midshaft and malunion supracondyle of right femur

CASE TWO

Mr. D N, a 48 year old motorcyclists/ photographer was admitted on account of a severely comminuted supracondylar fracture of the left femur following a collision with another motorcycle two months before presentation. He was initially being treated by a traditional bonesetter. His PCV on admission was 20% and being a Jehovah's witness did not consent to any form of blood transfusion. He was given 8,000 international units (IU) of erythropoietin and 50mg of iron dextran twice weekly for three weeks. His PCV rose to 38% and had a successful open reduction and plating with bone grafting of the fracture. He however developed signs of arterial occlusion 18 hours after surgery and emergency exploration and thrombectomy was done by a combine team of trauma and vascular surgeons. The result was satisfactory. Additional 800 IU of erythropoietin and 50mg of iron dextran was commenced twice weekly with good result. He was also given ceftriazone, enaxoparin and good nutrition during the post operative period. His present PCV is 32 and the general condition is satisfactory.

Figure 3



DISCUSSION

A team management approach was adopted in both cases. This comprised physicians, anaesthetists, haematologists, vascular and ortho-trauma surgeons. A staged procedure including:

- Optimization of haemoglobin with growth factor and haematinics (erythroitin, dextrans,etc)
- Control of blood pressure, use of anticoagulant and potent antibiotics
- Multi-staged osteoclasis and osteosynthesis with more emphasis on the nonunions for patient one; osteosynthesis and thrombectomy/vascular repair for patient two.

Optimization of haemoglobin was limited by patients' faith to only the use of growth factors and haematinics (erythropoeitin, iron dextran, etc).[123]

Blood loss was minimized as much as possible by using preoperative dilution technique ,meticulous intraoperative haemostasis as well as epidural anaesthesia.[12] The protocol for the administration of the growth factors and haematinics included: [5678]

Subcutanous human recombinant erythropoietin 4000IU twice weekly.
Intravenous iron dextran (50mg) into one litre of 5% dextrose in normal saline twice weekly.
Vitamins C, Bcomplex three times daily

Throughout this period the blood pressure of patient number one was under control with antihypertensive drugs. This patient spent about 16 weeks in hospital because of delays in provision of basic requirements for the different aspect and stages of treatment.

The estimated expenses for patient one was about 500,000.00 Nigerian naira for a problem that would have been solved with less amount if he had not left the hospital against medical advice.[9] Patient is expected to report for review every eight weeks. These were achieved despite inadequate hospital/theatre facilities.

Complications of musculoskeletal injuries form a major component of the day-to-day job of orthodox traumatologists and orthopedic surgeons in our sub region. This places a great burden on the surgeons who spent a greater part of their time in correcting complications rather putting their expertise to use in practicing modern Orthopaedics. Though it may retard progress in modern research, it does create a stimulus for innovations which enables them to overcome these peculiar problems in environment of limited resources. In many instances the morbidity remains high and the final outcomes may not be documented as most patients default from follow-up. These are due to ignorance, poverty and lack of social support. These are the challenges in the management of the complications of musculoskeletal injuries in the West African sub region particularly among those patients who may not consent to blood transfusion. This study was different from our previous report because here, erythropoietin was available though at a high cost as opposed to the time when it was very scarce in our environment.[10]

CONCLUSION

Non transfusion surgery is an established and beneficial phenomenon in surgical practice but very demanding and critical in circumstances associated with complicated fractures, poverty and poor social support system. A need for a functional Health Insurance policy and a regular review of blood transfusion policies in the developing countries should not be overemphasized.[910]

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Author Information

Anthony M. Udosen, FMCS (ortho), FWACS, FICS
Department of Surgery, University of Calabar Teaching Hospital

Marcus A. Inyama, FMCPath (Haem)
Department of Anaethesia, University of Calabar Teaching Hospital

Anietimfon U. Etiuma, FMCS, FWACS
Department of Surgery, University of Calabar Teaching Hospital

Samuel Urom, MB,BCh
Department of Surgery, University of Calabar Teaching Hospital

Marwa, MB,BCh
Department of Surgery, University of Calabar Teaching Hospital

Emmanuel Djunda, MB,BCh
Department of Haematology, University of Calabar Teaching Hospital