Scottish Parliament Region: North East Scotland

Case TS0166_03: Tayside NHS Board

Summary of Investigation

Category

Health: Hospitals; Clinical treatment

Overview

The Complainant (Mr C) raised a number of concerns about the care and treatment he received for his broken leg at Ninewells Hospital, Dundee (the Hospital) between September 2001 and January 2002.

Specific complaints and conclusions

The complaints which have been investigated are that:

(a) the original external fixator in his leg should not have been removed without pain relief, and should not have been removed from Mr C's leg while there was non-union of bones (*not upheld*);

(b) the shortness in Mr C's right leg should have been corrected (*not upheld*); and

(c) inappropriate advice was given in January 2002 that Mr C's bones were united enough to benefit from intensive physiotherapy, and that an x-ray should have been taken before such advice was given (*not upheld*).

Redress and recommendations

The Ombudsman recommends that Tayside NHS Board (the Board):

(i) should include doctors' note keeping as part of their yearly appraisal; and

(ii) perform an audit to ensure that record keeping at the Hospital is of a sufficiently high standard and complies with the standard set down by the General Medical Council's Good Practice Guidelines.

The Board have accepted the Ombudsman's recommendations and will act on them accordingly.

Main Investigation Report

Introduction

1. On 23 March 2005 the Ombudsman received a complaint from a man (referred to in this report as Mr C) about the care and treatment he received for his broken leg at Ninewells Hospital, Dundee (the Hospital) between September 2001 and January 2002.

2. Mr C (aged 33 at the time) worked as a technician with the Royal Air Force. On 10 August 2001 he fell off a ladder when cleaning the windows of his married quarters and suffered a pilon fracture to the tibia and fibula (see Annex 2 for an explanation of the medical terms used) of his right leg. At that time he was based in Wales, and was admitted to a local hospital, where a hybrid external fixator was put on his leg. Shortly after he was discharged, he was transferred to Scotland due to his work commitments, and Tayside NHS Board (the Board) took on responsibility for treating his leg.

3. The complaints from Mr C which I have investigated are that:

(a) the original external fixator in his leg should not have been removed without pain relief, and should not have been removed from Mr C’s leg while there was non-union of bones;

(b) the shortness in Mr C’s right leg should have been corrected; and

(c) inappropriate advice was given in January 2002 that Mr C's bones were united enough to benefit from intensive physiotherapy, and that an x-ray should have been taken before such advice was given.

4. In addition as the investigation progressed, I identified a concern about:

(d) the adequacy of Mr C’s clinical notes.

Investigation

5. The investigation of this complaint involved obtaining and reading all the relevant documentation, clinical records and complaint files. I have obtained advice and guidance from two professional advisers. One had expertise in orthopaedic surgery (the Orthopaedic Adviser) and the other had expertise in radiology (the Radiology Adviser). The Board have also been asked for further information on a number of matters. I have not included in this report every detail

investigated but I am satisfied that no matter of significance has been overlooked. Mr C and the Board have been given an opportunity to comment on a draft of this report. Finally, in line with the practice of this office, the standard by which the complaint was judged was whether the events were reasonable, in the circumstances, at the time in question.

6. A list of the abbreviations used in this report is at Annex 1, and an explanation of the medical terms used is at Annex 2.

Background to the complaint

7. Chronology of events:

10 August 2001	Mr C suffered a comminuted (broken in several places) pilon fracture of his right ankle. He was admitted to a hospital in Wales, where the fracture was stabilised with a ring fixator of the Spinellie hybrid variety. He was subsequently discharged, and transferred to Scotland.
21, 25 August and 6, 12, 13 September 2001	X-rays taken of Mr C's ankle.
13 September 2001	Mr C was admitted to the Hospital for adjustment of the external frame. Consultant 1, a consultant orthopaedic surgeon, adjusted Mr C's frame under general anaesthetic.
26 September 2001	Mr C was seen at the out-patient's clinic by Consultant 1's registrar. The registrar wrote to Mr C's medical officer and stated that Mr C's 'ankle movement has improved somewhat since his adjustment of his hybrid frame. We have released one of the pin sites today and this has relieved the tension. He should start weight bearing and work on his range of movement …'
24 October 2001	Consultant 1 removed the external fixator from Mr C's leg in his out-patient's clinic. Mr C was then placed in a removable lower limb brace to be worn when mobilising,

	which could be removed when not weight bearing to encourage movement of the ankle. The brace was a supportive brace which was very similar to a plaster cast. An x-ray was taken of Mr C's ankle.
21 November 2001	Consultant 1 reviewed Mr C at his out-patient clinic. Consultant 1 wrote to Mr C's medical officer 'I reviewed this man who has now been out of his frame for four weeks. His check x-ray shows that there has been no loss of position and things look very well as far as the tibia is concerned. There is in fact a non-union of the fibula where he is having a little bit of pain. I think that he can now work towards discarding his boot and build up his activities. I think it would be reasonable for him to return to light duties and possibly full work in approximately a month. I have suggested that he wears a well fitting laced boot for support when he returns to work. If he gets undue swelling he should elevate it.' An x-ray was taken of Mr C's ankle.
30 January 2002	Consultant 1 reviewed Mr C at the out-patient clinic. He wrote to Mr C's medical officer 'I reviewed this man who is getting on satisfactorily from the point of view of his fracture. The fracture is now pretty solidly healed. It is in a little bit of valgus though clinically this is not obvious. I think it would be very sensible for him to go to [the Defence Services Medical Rehabilitation Unit] and improve his mobility. If in the long term the valgus is a problem when all is healed and sorted out it would be possible to do a closing wedge osteotomy but I think this would be unlikely to be necessary'.
1 February 2002	A medical officer at Mr C's RAF base wrote a referral for Mr C to be admitted to the Defence Services Medical Rehabilitation Unit. He wrote '[…] the patient is due out of

	the Service in February 2003 but is desperate to have his time extended and complete his full career in the RAF.' He also explained that the referral was being made in order that 'his recovery can be assisted and maybe even hastened. He is very well motivated and very keen to assist his recovery in any way and I feel is very well suited to more intensive rehabilitation'.
21 February 2002	Mr C was admitted to the Defence Services Medical Rehabilitation Unit. The clinical notes relating to his admission state 'Currently he reports that his pain level is 5/10 and that he has decreased dorsiflexion in the right ankle. Otherwise he feels that his ankle is stable'.
26 February 2002	An x-ray was taken of Mr C's leg at a local hospital.
13 March 2002	Mr C was seen by a consultant orthopaedic surgeon at a local hospital, who told Mr C that there was a non-union of the tibia as well as the fibula, and recommended that he should get an urgent review at the Hospital.
20 March 2002	Mr C returned to Scotland, and as Consultant 1 was on annual leave, he attended an appointment with Consultant 2, another consultant orthopaedic surgeon at the Hospital. Consultant 2 did not consider that he had the relevant expertise to treat Mr C, and as Mr C was adamant that he did not want to see Consultant 1 again, referred him to be treated at a NHS hospital in Edinburgh.

8. On 18 June 2002, Mr C complained to the Board about the care and treatment he had received. He raised the following concerns:

- why was the original external fixator removed without pain relief;
- why was the external fixator removed whilst there was still a non-union of the bones in his right leg;
- why was there no effort to correct the shortness in his right leg;

- why was he recommended to go to and have intensive physiotherapy when his leg was effectively still broken;
- why did Consultant 1 miss the non-union of two of the bones in his leg, when three other doctors spotted it easily on the x-rays; and
- why did Consultant 2 show a lack of interest in Mr C's case.

9. The Board sent Mr C a formal response in a letter dated 12 November 2002. Mr C was not satisfied with this response, and on 1 December 2002 he wrote to request that an Independent Review Panel consider his outstanding complaints. The Review Panel Convener replied on 16 December 2002 refusing his request, and explained that as Mr C had said that he would be looking for compensation it was not possible to set up a Panel.

10. On 15 January 2003 Mr C asked the Ombudsman to investigate the complaints he considered had not been dealt with satisfactorily.

(a) The original external fixator in his leg should not have been removed without pain relief, and should not have been removed from Mr C's leg while there was non-union of bones

11. The Board provided their formal response to this aspect of the complaint, and stated:

> 'The frame that [Mr C] had originally, was not the type normally used by [Consultant 1] in Tayside and is significantly less adaptable than the formal Ilizarov frames that he normally uses. When [Mr C] was referred to [Consultant 1], the fracture was well into the healing process and [Consultant 1] was unable to adjust it as he wished. He elected to continue using the hybrid frame rather than change to an Ilizarov, which would have given more flexibility.
>
> In most units across the United Kingdom, external fixators are removed in the out-patient clinic without an anaesthetic. On some occasions, Entonox (a pain relieving gas) is used, however, most patients find this procedure uncomfortable rather than painful and the use of anaesthetic is not justified. The only occasion that [Consultant 1] uses formal anaesthetic (local or general) is when the bubble on the wires (called olives) are used, which require an incision of the skin to remove them. […] Half pins are routinely

removed in the out-patient clinic by [Consultant 1] and his colleagues without analgesia.

The Trust considers that the management of the removal of the external fixator was appropriate, however, apologies were offered for the unusual level of pain suffered by [Mr C] and for the lack of explanation and reassurance on the blood loss that occurred. [Consultant 1] now spends significantly longer discussing with patients and explaining the removal of the frame. There are many patients who have had frames removed, both before and since, who agree that although uncomfortable, they would not wish to have their frames removed under a formal anaesthetic because of both the risks and problems that may go with that.

The decision as to when the fracture is united or otherwise in this situation is very difficult, especially when the frame is in place as this frequently obscures the plane of the fracture. Following removal of the frame, [Mr C] was placed in a supportive boot for the first four weeks and as his symptoms were settling, this was removed and [Mr C] was encouraged to increase his mobility.

The patient was treated with a Spinelli type hybrid. This would have been removed at this time anyway, even if the fracture was not fully healed and [Mr C] would have been placed into a plaster cast rather than a supportive boot. It would then have been treated in a plaster cast to union, fully weight-bearing on the plaster cast or alternatively if it did not go on to stiffen up either an Ilizarov frame, as was supplied later, would have been applied, or when one was sure that there was no residual infection from the previous pin tracts, bone grafting and internal fixation would be considered by some units.

As far as the timing of the removal is concerned, it is accepted by the Trust that this was a wrong decision in this case and this aspect of the complaint is justified.'

The Orthopaedic Adviser's opinion

12. The Orthopaedic Adviser considered that it was entirely reasonable to remove the external fixator without offering any form of anaesthetic or pain relief, and that it

was common practice to do so in the outpatient clinic. However, if there was a real problem with pain when the fixator was being removed, and the patient needed help, then the procedure should have been postponed and the patient brought into hospital for a general anaesthetic.

13. Throughout my discussions with the Orthopaedic Adviser, he has emphasised that configuration of Mr C's fracture was phenomenally difficult to treat, and that the risks of major complications in this case were ever present. To put this into perspective, he also commented that it would not have been beyond the realms of possibility that his ankle would have needed an ankle fusion or some form of surgical ablation of that area, ie amputation below the knee.

14. The diagnosis of union or non-union would be decided on by both clinical examination and x-ray examination. The Orthopaedic Adviser explained there were a number of difficulties in trying to diagnose whether there has been union or non-union. These include the fact that x-rays are inaccurate as a measure of union and that fracture lines may be visible for many months after full union has occurred. CT scans have advanced in the last few years, and if the same circumstances were to exist today, it may have been possible to check on healing using a CT scan. In 2001, however, the scatter rays from the 'metal work' in Mr C's leg would have made it very difficult to detect the fine changes of bone healing that Consultant 1 thought were happening, and Consultant 1 would have relied heavily on his clinical examination of Mr C to determine whether there had been union or not.

15. The Orthopaedic Adviser advised that non-union, if it was going to occur, had a multiplicity of causes, but the most important cause of non-union in this case was the force with which the injury occurred and the nature of the fracture lines and fracture fragments, the initial explosion at the time of the injury would have cut off the blood supply to some of the bone and the distal tibia and resulted in difficulties in healing.

16. In the Orthopaedic Adviser's opinion, it was a mistake to remove the external fixator from Mr C's leg after only ten weeks. However, he also advised that assuming that there had been no delay in picking up the non-union, Mr C's recovery could be computed as six months under Consultant 1's care from the time

the fixator came off, and another four months before he was seen by the consultant at the hospital in Edinburgh and that this delay of 10 months might well have happened even if the fixator had been removed later than it was. The Orthopaedic Adviser said that although, in his opinion, he considered Consultant 1 made the wrong decision to remove the external fixator, it was a clinical decision that under the circumstances was not unreasonable.

(a) Conclusion

17. The Board have accepted that there was a wrong decision concerning the timing of the removal of the external fixator and, if they have not already done so, I suggest they apologise to Mr C for that. The Orthopaedic Adviser also considered the decision to remove the fixator to have been premature, but under the circumstances, such a decision was a reasonable one to have made. I accept this advice, and given that the clinical judgement made was not unreasonable and was in line with accepted practice, I do not uphold this complaint.

(b) The shortness in Mr C's right leg should have been corrected

18. After Mr C had lodged his complaint with NHS Tayside, they followed their internal local resolution procedure. At that time, NHS Tayside's Patient Liaison Co-ordinator asked Consultant 1 to comment on Mr C's complaints. In a letter dated 23 September 2002 addressed to the Patient Liaison Co-ordinator, Consultant 1 wrote:

> 'I did not think it was reasonable in [Mr C's] case to do a proximal callotasie, the function of which is normally to stimulate the bone healing process and coincidentally carry out a lengthening procedure if this is required. The normal working definition of shortening requiring surgical intervention requires a minimum of 1", ie 2.5 cm and there is good information in the literature suggesting that a shortening of up to 2" is not functionally important.
>
> I do carry out all the leg lengthening in Tayside and my normal criteria is that I will suggest somebody has a leg lengthening over 2", ie 5 cm. It is a personal decision between 1" (2.5 cm) and 2" and I would not normally consider somebody with a shortening of less than 1" for leg lengthening unless I was doing a callotosie to stimulate healing, in which case the risks and problems of the lengthening would be required anyway.'

19. In the Orthopaedic Adviser's opinion, at the time that Consultant 1 was treating Mr C, when he was newly out of a frame, it would have been too early to discuss leg lengthening. It was also reasonable not to get involved in discussions on this topic at an early stage where the leg length discrepancy was not gross and where there was no definite suggestion from Mr C that he was actively seeking leg lengthening.

20. The Orthopaedic Adviser commented that if Consultant 1 had seen Mr C at a later stage, after his return from rehabilitation, and his fracture had in fact united, then that may have been an appropriate time to discuss the possibility of leg lengthening.

(b) Conclusion

21. I consider Consultant 1 provided a very thorough account of the circumstances which would need to exist before he would consider lengthening a patient's leg, and it is unfortunate that for some reason this explanation was omitted from the Board's written response to Mr C's complaint. In light of Consultant 1's explanation and the opinion given by the Orthopaedic Adviser, I find that it was reasonable for Consultant 1 not to have discussed the possibility of lengthening Mr C's leg, or to have performed any surgery to lengthen it, at the time that he was treating him and, therefore, I do not uphold this complaint.

(c) Inappropriate advice was given in January 2002 that Mr C's bones were united enough to benefit from intensive physiotherapy, and that an x-ray should have been taken before such advice was given

22. The Board provided the following formal response to this aspect of Mr C's complaint:

> ‘[Consultant 1] reviewed [Mr C] on 30 January 2002 and considered that the fracture had healed solidly, therefore, he advised to proceed to physiotherapy. Between 24 October to 30 January, a period of three months, [Mr C] did not experience any signs of non-union in the form of loss of position or increasing problems of pain. It was on this basis that [Consultant 1] decided that the fracture was fully united and sufficiently strong enough for [Mr C] to proceed to physiotherapy.

> Whether [Mr C] had a further injury after this or whether what was obviously only a tenuous non-union broke down under the intensive physiotherapy regime is uncertain. It is very difficult to predict when fractures are fully healed and how fast to rehabilitate patients. However, in retrospect it had been accepted by the Trust that this advice was inappropriate given the treatment that was required at a later date and that this aspect of the complaint was justified.'

23. I asked the Board to confirm whether Consultant 1 had considered taking an x-ray of Mr C's ankle on 30 January 2002, and to explain why he decided not to do so before recommending that Mr C should attend the Defence Services Medical Rehabilitation Unit. Consultant 1 confirmed that he had considered taking an x-ray, and referred to the letter he had written after examining Mr C on 30 January 2002, where he diagnosed that the fracture had solidly healed from his clinical examination. He explained he did not do so as:

> 'Clinically I felt that the fracture was impacted and healed on the x-ray of 21 November 2001. As Mr C had already had five sets of x-rays in [the Hospital], plus previous sets of x-rays in South Wales, he was getting significant radiation dosage. X-rays should only be taken on radiation grounds if clinically indicated, and I very obviously did not feel these were clinically indicated on 30 January 2002.'

Orthopaedic Adviser's opinion

24. I have already set out the difficulties for orthopaedic and trauma surgeons to be certain of whether there is a union or a non-union of a bone such as a tibia after such a major trauma. The Board has accepted that the recommendation that Mr C should be referred to proceed to physiotherapy was inappropriate, and the Orthopaedic Adviser also considered the diagnosis of union made by Consultant 1 on 30 January 2002 was wrong, but that this was with the benefit of hindsight.

25. The Orthopaedic Adviser said that Consultant 1 reached the diagnosis that there was union of Mr C's ankle bone on the basis of previous x-rays as well as his clinical examination. The clinical examination made him sure that there had been union, and that this was supported by reviewing the x-rays. The Orthopaedic Adviser commented that if the x-ray film taken on 24 October 2001 is superimposed on the film of 21 November 2001, there would appear to be no

difference in the residual angulation of the distal tibial fragments, which indicated that there had been no movement. This is relevant because if there is a degree of mobility at the fracture site then a deformity, such as the one in this case, would be expected to have got worse over a period of four weeks. From the x-rays, he did not consider that this had happened. In addition to this, the Orthopaedic Adviser further commented that there is no evidence in Mr C's clinical notes of his assessment at his admission to the Defence Services Medical Rehabilitation Unit that there was any suggestion of non-union when he was clinically examined.

26. The Orthopaedic Adviser did not consider that radiation should be used as an excuse for not getting x-rays if they were required, particularly when the x-ray would be of some peripheral part of a patient's body, such as an ankle. He advised that if he had been treating Mr C, he would have taken a check x-ray on 30 January 2002, to confirm his diagnosis, particularly as Mr C was going for physiotherapy out of his control and out of his area of the country. He was aware that not all other practitioners would have done so, and in this case Consultant 1 had considered that union was proceeding and was clinically secure enough in his own mind that matters were progressing that he did not believe an x-ray was needed on clinical grounds.

27. In the Orthopaedic Adviser's opinion, Consultant 1's decision to mobilise Mr C was understandable, and not unreasonable in the circumstances. I accept this advice, and also take into account the fact that Mr C was 'desperate' to regain full fitness as quickly as possible for the sake of his career, which is recorded in the letter from his medical officer dated 1 February 2002. This may have affected the way that he presented his symptoms at the time he was clinically examined.

(c) Conclusion

28. As a result of the advice I have been given, I find that there is no evidence that the advice given to Mr C was unreasonable in the circumstances, and do not uphold this aspect of the complaint.

(d) The adequacy of the clinical notes

29. In the course of this investigation the Board were asked to supply a copy of Mr C's medical records, a copy of the complaint file, and correspondence relating to an Independent Review on 28 January 2003. The Board were also asked to

provide Mr C's x-rays, and any documentation relating to Mr C's out-patient appointment of 24 October 2001. The Board wrote on 10 February 2003, enclosing the x-rays, but stated that they could find no documentation relating to the out-patient appointment.

30. I am concerned that there are no surviving clinical notes recorded in respect to Mr C's out-patient appointment on 24 October 2001, particularly as this was the occasion when the external fixator was removed, and should have contained full details of Consultant 1's diagnosis of Mr C's fracture, and the reasons why it was considered appropriate to remove it at that time. The notes may also have recorded Mr C's discomfort or concerns about the lack of pain relief, or the amount of blood that was lost. I have not been provided with any explanation why there is no documentation concerning this appointment and, therefore, do not know whether the record has been lost, or whether no record was made.

31. I asked the Board for Consultant 1's contemporaneous notes of his treatment of Mr C, or the reason why they were not available. The Board replied that in common with all his colleagues at the Hospital, Consultant 1's clinical notes were in the form of his letters to the patient's General Practitioner, or dictated separately and sent to the General Practitioner.

32. Paragraph 3 of the 'Good Practice Guidelines' issued by the General Medical Council states:

> 'In providing care you must: […] keep clear, accurate, legible and contemporaneous patient records which report the relevant clinical findings, the decisions made, the information given to patients and any drugs or other treatment prescribed.'

33. The Orthopaedic Adviser commented that it is quite common to find notes only in the form of a typewritten letter to the General Practitioner, and as long as they are legible and contain sufficient information, then they are adequate for the purpose. In his opinion, however, there was no doubt that Consultant 1's typewritten notes did not contain all the information that might be required with different doctors looking after Mr C.

(d) Conclusion

34. I accept the view of the Orthopaedic Adviser, and find that Consultant 1's clinical notes concerning his treatment of Mr C were not adequate. As I do not know whether Consultant 1 made a written record of his treatment of Mr C on 24 October 2001, or whether it has been lost, I am not able to make any findings on this specific matter.

(d) Recommendation

35. The Ombudsman recommends that the Board:

(i) should include doctors' note keeping as part of their yearly appraisal; and

(ii) perform an audit to ensure that record keeping at the Hospital is of a sufficiently high standard and complies with the standard set down by the General Medical Council's Good Practice Guidelines.

36. I am pleased to report here that the Board have accepted the Ombudsman's recommendations and will act on them.

30 January 2007

Annex 1

Explanation of abbreviations used

Mr C	The complainant
The Hospital	Ninewells Hospital, Dundee
The Board	Tayside NHS Board
The Orthopaedic Adviser	Orthopaedic adviser to the Ombudsman
The Radiology Adviser	Radiology adviser to the Ombudsman
Consultant 1	A consultant orthopaedic surgeon at the Hospital
Consultant 2	A consultant orthopaedic surgeon at the Hospital

Annex 2

Glossary of medical terms

Callus	Mass of new bony tissue formed early in the healing of a bone fracture
Comminuted fracture	The term comminuted fracture is applied to one where there is splintering of the bone ends. This results in a situation where exact reconstitution or reconstruction is difficult or impossible. This situation is usually caused in cases of direct trauma.
CT scan	Computerized tomography scan. Pictures of structures within the body created by a computer that takes the data from multiple x-ray images and turns them into pictures on a screen. CT stands for computerized tomography. The CT scan can reveal some soft-tissue and other structures that cannot even be seen in conventional x-rays. Using the same dosage of radiation as that of an ordinary x-ray machine, an entire slice of the body can be made visible with about 100 times more clarity with the CT scan.
Distal	The extremity or distant part of the limb.
Dorsiflexion	Turning upwards of the foot or the toes
Fibul	Smaller bone in lower leg
Osteotomy	The surgical cutting of a bone
Pilon fracture	Fracture of the part of the tibia extending into the ankle joint

Proximal	Nearest the trunk of the body or point of origin of the limb
Proximal callotasis	When a surgeon drills some holes in the cortex, ie the strongest part of a bone, and at a later stage breaking the bone again carefully in such a way as not to disrupt much of the blood supply to the bones in which the operation is taking place.
Tibula	Larger bone in lower leg
Valgus	An abnormal position in which part of a limb is twisted outward away from the midline