Scottish Parliament Region: Lothian

Case 200800963: A Dentist, Lothian NHS Board

Summary of Investigation

Category

Health: Family Health Services, Dental and Orthodontic Services

Overview

The complainant (Mrs C) raised a number of concerns about the dental treatment she received from her dentist (the Dentist) on 25 January 2008, which led to her attending her local hospital in great pain and with a swollen face. Mrs C's care was then taken over by a consultant oral and maxillofacial surgeon who told her that the numbness in her face could take up to six weeks to heal or it could be permanent.

Specific complaint and conclusion

The complaint which has been investigated is that, on 25 January 2008, the Dentist provided Mrs C with an inadequate level of treatment (*upheld*).

Redress and recommendations

The Ombudsman recommends that the Dentist:

(i) apologises to Mrs C for the failings identified in this report; and

(ii) reflects on the Adviser's comments in regard to the standard of radiographs, working length calculation and record-keeping.

The Dentist has accepted the recommendations and will act on them accordingly.

Main Investigation Report

Introduction

1. On 7 July 2008 the Ombudsman received a complaint from Mrs C about the dental treatment she received from her dentist (the Dentist) on 25 January 2008, which led to her attending her local hospital (the Hospital) in great pain and with a swollen face. Mrs C's care was then taken over by a consultant oral and maxillofacial surgeon (the Consultant) who told her that the numbness in her face could take up to six weeks to heal or it could be permanent. Mrs C complained to the Dentist but remained dissatisfied with her response and subsequently complained to the Ombudsman.

2. The complaint from Mrs C which I have investigated is that, on 25 January 2008, the Dentist provided Mrs C with an inadequate level of treatment.

Investigation

3. In writing this report I have had access to Mrs C's dental records from the dental practice (the Practice) and the Hospital and the correspondence relating to her complaint. I made an enquiry of the Dentist and interviewed a dental nurse (the Nurse) and I obtained advice from the Ombudsman's professional dental adviser (the Adviser) regarding the clinical aspects of the complaint.

4. I have not included in this report every detail investigated but I am satisfied that no matter of significance has been overlooked. An explanation of the abbreviations used in this report is contained in Annex 1. Mrs C and the Dentist were given an opportunity to comment on a draft of this report.

Complaint: On 25 January 2008, the Dentist provided Mrs C with an inadequate level of treatment

5. In a letter to the Dentist dated 31 January 2008, Mrs C complained about the treatment which she received on Friday 25 January 2008. She said that, following a numbing injection at the back of her jaw, the problem tooth was isolated, rubber sheeting was put in place and treatment commenced. The Dentist then removed the main filling and started to remove the pulp in the root. Mrs C found this painful but manageable enough to continue. However, once the root treatment started she said the pain increased markedly and without any warning she suffered an incredibly sharp pain through her jaw and cheek. Mrs C asked the Dentist what had happened but she said she was unsure and

asked Mrs C to sit for a minute. Mrs C felt the left side of her face swell up quickly and was told that the tooth would have to be removed. The tooth was removed and she was given a rolled-up tissue to bite down on and was told the bleeding would stop. Mrs C continued that when she left the surgery she was told by the dentist to put her feet up for a couple of hours and rinse her mouth out with warm water and salt, despite the fact her face was swollen and she was in pain.

6. Mrs C said that she returned to work later that day but had to go home, due to the pain. Mrs C's husband then telephoned the Dentist and was told to take Mrs C to the Accident and Emergency Department at the Hospital. Mrs C was assessed on arrival and was given Tramadol (analgesia) and her mouth was x-rayed. Mrs C said she was told the Hospital had contacted the Dentist to establish what had happened and the Consultant at the Hospital told her that the treatment had been applied with such force it had split a nerve and damaged it. By this time Mrs C still had no feeling in the left side of her face, her chin and lips. She was given more painkillers and antibiotics to take, along with Ibuprofen (anti-inflammatory medication) and paracetamol (analgesia) if required. Mrs C said she spent the weekend in pain and re-attended the Hospital on 28 January 2008. Mrs C saw the Consultant again, who was concerned that a lump had formed under the swelling and that Mrs C still had a loss of feeling in her cheek, jaw, lower lip and chin. Mrs C was told the condition could take six months to resolve or it could be permanent. Mrs C was seen for follow-up treatment at the Hospital again the following week and was told that if the lump did not disappear naturally over time it may have to be removed. Mrs C wanted to know what had gone wrong and why she was allowed to leave the Practice when she was unwell.

7. The Dentist responded to the complaint that she was sorry the treatment had not gone to plan. She advised that Mrs C had developed a severe reaction to the antiseptic solution which was used to clean out the tooth. The Dentist explained that the treatment she carried out was root treatment, which was used when the nerve of a tooth became irreversibly inflamed or had died. The purpose of the procedure was to remove the affected nerve, reshape and clean out the root canal and fill it with inert root filling material. The Dentist said that treatment in a left premolar tooth was normally straightforward and that she had not anticipated that Mrs C would develop such severe pain during the procedure. The Dentist continued that she cleaned the inside of the root, using standard antiseptic and in accordance with accepted clinical practice. The

Dentist could only assume that for some reason some of the antiseptic permeated through the tip of the root into the soft tissues. The only other reason she could suggest was that Mrs C had developed an allergy to the antiseptic. The Dentist could not understand why some of the antiseptic seeped through the tip of the root because she used gentle pressure to ensure that the antiseptic remained in the root canal.

8. The Dentist continued that she tried to clean the root canal as much as possible and recalled that this made Mrs C slightly better. However, Mrs C did not want to continue with the root treatment and it was agreed they would proceed to the extraction of the tooth. The Dentist explained that after the tooth was extracted the pain appeared to settle, with a slight throbbing, and that Mrs C had asked about the swelling. The Dentist answered that as the swelling appeared so quickly, and if it was an allergic reaction, then it was likely to go down reasonably quickly. The Dentist said that she would not have let Mrs C leave the Practice if she thought she was ill or unwell but she was under the impression that Mrs C was feeling better. However, if she had misunderstood the situation then she apologised.

9. The Adviser provided me with clinical information relating to the complaint. He felt that the essence of Mrs C's complaint related to the commencement of root canal treatment at tooth LL5. He explained the purpose of root canal treatment was to remove the nerve or nerves from the tooth, clean/irrigate the space left and then fill the root canal(s). He went on to say that firstly the affected tooth required to be isolated and a rubber dam placed around the tooth, in order that it could be worked on without the risk of instruments being dropped into the mouth or saliva contaminating the area. In root canal treatment, irrigants were used to clean out the root, as in Mrs C's case, and the rubber dam protected the rest of the mouth from the irrigant.

10. The Adviser then defined periapical radiolucency, which the Dentist had recorded in Mrs C's notes as being present at Mrs C's previous dental appointment on 14 January 2008. This is where infection at the tip of the root (the apex) of a tooth destroys bone around the tooth apex resulting in radiolucent defects on radiographic examination of the area. The radiolucency appears as a dark area around the apex of the root. Because it takes several days for enough bone destruction to produce a radiolucent lesion, the earliest periapical lesions may not be detected in a radiograph. The more long-lived ones will cause enough bone destruction to produce radiolucency that can be

easily detected in a radiograph. The Adviser viewed the x-ray that the Dentist took at Mrs C's dental appointment on 14 January 2008. He felt the x-ray was underexposed, difficult to read and of poor diagnostic quality. He believed the x-ray did not meet the standards of the IRMER (Ionising Radiation Medical Exposure Regulations 2000). The Adviser noted that, although the Dentist had recorded 'periapical radiolucency' in the records, in the Adviser's opinion, due to the poor quality of the x-ray, he could not diagnose this area of radiolucency.

11. The Adviser continued that, at the commencement of root canal treatment, the dentist drills into the tooth to access the root canal. This is known as the access cavity preparation. Once the root has been located, the working length of the root canal needs to be determined. Once the working length has been established, it enables the dentist to prepare the root canal as close as possible to the tip of the root, known as the apex. The Adviser said there were two methods for determining the working length. The first was electronically by using an apex locator, which is an electronic device which measures the length of a root canal accurately in most cases. The second is radiographic, where a root canal file is inserted into the root canal and a radiograph is then taken, which shows how far the file has been inserted in the root canal and if it has been placed in a correct position in relation to the apex of the root. The Adviser said it may be clinically necessary to take more than one radiograph to establish the correct working length and the working length must be recorded in the clinical notes. He said that from Mrs C's records it did not appear that the Dentist had used an apex locator or taken a working length radiograph. As a result, the Dentist would not be aware, with accuracy, of the length of the root and that this was a clinical error.

12. The Adviser went on to explain that, as part of root canal treatment, a dentist has to irrigate the root canal, as happened in Mrs C's case. The objectives of irrigation are to eliminate micro-organisms, flush out debris, lubricate root canal instruments and dissolve organic debris. The irrigant is usually introduced into the root canal with a syringe, ensuring that the solution is allowed to escape freely out of the top of the tooth, called the pulp chamber, and the irrigation must not be delivered with excessive force. The concentration of irrigation used must be recorded in the clinical notes, as set out in the European Society of Endodontology Guidelines. In Mrs C's case, the Adviser believed that the irrigant may have gone through (extruded) beyond the apex of LL5 into the surrounding tissue, with the unfortunate consequence that Mrs C suffered swelling of the buccal area (towards the cheek) adjacent to LL5 and

also hypoaesthesia (reduced sensation) of the left mental nerve. This was confirmed by entries in Mrs C's hospital records, as well as information that the irrigant solution which was used was sodium hypochlorite. The Adviser was unable to find any reference in Mrs C's dental records to the strength, use, or type of irrigation solution which was used. He said this was an example of poor record-keeping and a significant omission on the Dentist's behalf. The General Dental Council has published Standards Guidance which states that 'dentists should make and keep accurate and complete patient records'.

13. In response to my enquiries, the Dentist told me that she accepted that the radiograph taken on 14 January 2008 was underexposed but explained radiographs are used as an adjunct to a clinical finding and that it was clear from the records that day that LL5 was tender to percussion and painful on biting. This indicated to the Dentist that there was probably early apical periodontitis and the radiograph did allow her to determine that there was a darkening at the apex of the tooth in question. The Dentist also said that, before she placed a file into the root canal, she assessed the length of the root canal from the radiograph she had taken using an endodontic ruler. She then carefully placed the file into the root canal, ensuring it was short of the apex. Her next step would have been to use the apex locator to confirm for definite this working length, had the nerve not been so hyperaemic (increased blood flow). The Dentist was unable to recall if she actually used the apex locator or not, although one was available and it was always set up and ready to use with the rest of the root treatment equipment. In addition to removing the infected nerve, the Dentist said she gently irrigated the root canal with 5 percent sodium hypochlorite, using a Monojet endodontic needle and syringe. She then gently placed finger pressure on the syringe ensuring that the tip of the needle was only two thirds of the way down the length of the root canal. The Dentist said she did not place any undue pressure on the syringe. The Dentist added that sodium hypochlorite is only used in conjunction with a side exit endodontic needle and that type of needle would not force hypochlorite through the apex of the root canal.

14. The Nurse, who was present at the consultation on 25 January 2008, said that she did recall the appointment, as Mrs C had become quite upset during the treatment. She recalled that Mrs C complained of pain and suddenly sat up in the chair while the Dentist flushed out the root canal with sodium hypochlorite. The decision was then taken to extract the tooth rather than continue with root canal treatment. When the tooth was extracted Mrs C would

have been asked to wait until the blood clotted and could have remained in the waiting room if she felt unwell. The Nurse confirmed that apex locators were available in the Practice and that the Dentist would normally use one for root canal treatment. She also confirmed that it would be normal practice for the Dentist to use a Monojet endodontic syringe to insert the sodium hypochlorite into the root canal.

15. The Adviser noted that the Dentist could not recall whether she had used an apex locator. However, if she had used one he would have expected this to be clearly recorded. Given that there was no record of this and as no diagnostic x-ray was taken, he concluded there was no measurement for the Dentist to use when carrying out the root canal treatment. The Adviser said that although the hypochlorite solution (irrigant) had entered the tissues (see paragraph 12), it was not possible to say from the clinical records and available evidence whether the endodontic syringe had penetrated through the apex of the tooth, with the consequence of the hypochlorite solution entering the tissues. He added that it was equally possible that Mrs C's problems were caused by an unfortunate accident.

Conclusion

16. Mrs C complained about the standard of dental treatment that she received from the Dentist on 25 January 2008. She wished to know what had gone wrong during the procedure and why she had been allowed to leave the Practice whilst unwell. The Dentist said that she had acted in accordance with accepted clinical practice and that either some of the antiseptic permeated through the root into the soft tissue area or that Mrs C had suffered an allergic reaction to the antiseptic. The Dentist had apologised if she had misunderstood the situation and had been under the impression that Mrs C had been feeling better and was able to leave the Practice.

17. As detailed in this report I took advice from the Adviser as to whether he thought the treatment which was provided was of a reasonable standard. The advice, which I have received and accept, is that it was appropriate for the Dentist to consider root canal treatment as a means of saving the tooth. However, in this case the Adviser felt that the information available from the x-ray taken on 14 January 2008 was insufficient for the Dentist to reach a diagnosis of perapical radiolucency. The Adviser felt the radiograph did not meet the standards of the IRMER Regulations 2000, in that it was underexposed, difficult to read and of poor diagnostic quality. In addition, the

Adviser was unable to find evidence that the Dentist had determined the working length of the root canal either electronically or radiographically before commencing root canal treatment. As a result, it is possible that when inserting the irrigant into the root canal the Dentist went too far with the syringe and irrigant was inserted into the soft tissue area and this caused swelling and great discomfort to Mrs C, which required hospital intervention. I am also mindful of the Adviser's comments that the Dentist failed to record the type of irrigant that was used. Although the Adviser has been unable to conclude whether all of this had caused Mrs C's problems, it is the case that he has identified failings in treatment and, in all the circumstances, I uphold this complaint.

18. I have also considered Mrs C's concerns that she was allowed to leave the Practice while she was still unwell. The Dentist maintained that she believed Mrs C had improved and had she known she was still ill then she would not have allowed her to leave the Practice. The Dentist had apologised if she had misunderstood the situation. This is a difficult situation to reach a decision on as the interpretations of both parties are different but I have not seen any evidence that the Dentist failed in this regard. It can be difficult for staff to judge if a patient is fit for discharge and if Mrs C had specifically informed staff that she was not in a position to leave the Practice then I am sure her request would have been considered. I note that Mrs C felt well enough to attend her work later that day but had to leave as she was too ill.

Recommendations

19. The Ombudsman recommends that the Dentist:

(iii) apologises to Mrs C for the failings identified in this report; and

(iv) reflects on the Adviser's comments in regard to the standard of radiographs, working length calculation and record-keeping.

20. The Dentist has accepted the recommendations and will act on them accordingly. The Ombudsman asks that the Dentist notify him when the recommendations have been implemented.

Annex 1

Explanation of abbreviations used

Mrs C	The complainant
The Dentist	The dentist who treated Mrs C
The Hospital	Mrs C's local hospital
The Consultant	The Consultant Oral and Maxillofacial Surgeon who treated Mrs C
The Practice	The dental practice where the Dentist treated Mrs C
The Nurse	The dental nurse who was present on 25 January 2008
The Adviser	The Ombudsman's professional dental adviser