Journal of Research in Medical and Dental Science
2018, Volume 6, Issue 4, Page No: 61-64

Available Online at: www.jrmds.in
eISSN No. 2347-2367: pISSN No. 2347-2545

Cutaneous Sinus Tract of Dental Origin in an 8-Year-Old Child: A Case Report

Cecilia Young*, TH Tai

General Dental Practitioner, Dental Consultant and Columnist, Physician Pharmacist People Health Magazine, Hong Kong

ABSTRACT

Misdiagnosis of cutaneous sinus tract is not uncommon. Routine referral to dentists for complete oral examination to eliminate the possibility of dental sources or to give definitive diagnosis due to the dental origin is necessary during the differential diagnosis. This is a case report of a cutaneous sinus tract of dental origin of an 8-year-old girl who did not complain toothache throughout all 5 medical consultations. Repeated curettage caused unnecessary discomfort and finally led to un-cooperation. The last curettage was performed under general anaesthesia.
Finally thorough extra- and intra-oral examination together with orthopantomogram (OPG) gave the definitive diagnosis. Root canal treatment or extraction was the treatment options of pulpal originated cutaneous tract. The tooth 36 was extracted under Monitored Anaesthetic Care in this case; the sinus tract recovered and the second orthopantomogram (OPG) showed the disappearance of radiolucency in the mandible during the review.

Key words: Dental infection, Cutaneous sinus tract, General anaesthesia, Root canal treatment, Tooth extraction

HOW TO CITE THIS ARTICLE: Cecilia Young*, TH Tai, Cutaneous sinus tract of dental origin in an 8-year-old child: A case report, J Res Med Dent Sci, 2018, 6 (4):61-64

Corresponding author: Cecilia Young
e-mail✉: ceciliatyp@yahoo.com.hk
Received: 04/07/2018
Accepted: 25/07/2018

CASE REPORT

An 8-year-old girl attended a private dental clinic with a chief complaint of a cutaneous swollen lump with turbid fluid at left lower mandibular area (by pointing) for 6 months (Figure 1). Medical history and drug history were unremarkable. Further history taking revealed that the patient had previously visited 5 different doctors, including 3 physicians, a dermatologist half a year ago, and a plastic surgeon recently. She had previous dental treatments about 1 year ago by the therapist for simple filling. There was no toothache during the first consultation in this dental clinic.

Figure 1: An 8-year-old girl attended a private dental clinic with a chief complaint of a cutaneous swollen lump with turbid fluid at left lower mandibular area (by pointing) for 6 months

The first three physicians cleaned and dressed the wound, performed curettage and prescribed medications. The dermatologist took a biopsy of the skin lesion with a diagnosis of inflammation and then referred the patient to the plastic surgeon, where the patient had received 2 times of curettage from the skin at the left lower mandibular region, with local anaesthesia (LA) and general anaesthesia (GA) respectively. Partial excision of the skin and lump was also performed. The condition recurred 1 month later, and hence the patient visited this dental clinic.

On extraoral examination, the lump was purple/ erythematous with exudate at the centre (Figure 1).

Intraoral examination revealed that there were 74 and 84 retained roots, i.e. both lower left and right deciduous first molars. It was not possible to examine intra-orally in detail and took periapical film since the patient was very uncooperative that day. An orthopantomogram was taken instead.

Orthopantomogram revealed an occlusal filling and a region of radiolucency at the distal root of 36 i.e. lower left first permanent molar (Figure 2). The dead pulp of 36 caused the radiolucency. The diagnosis is odontogenic cutaneous sinus tract. The patient refused another periapical film of 36 for further detailed examination.

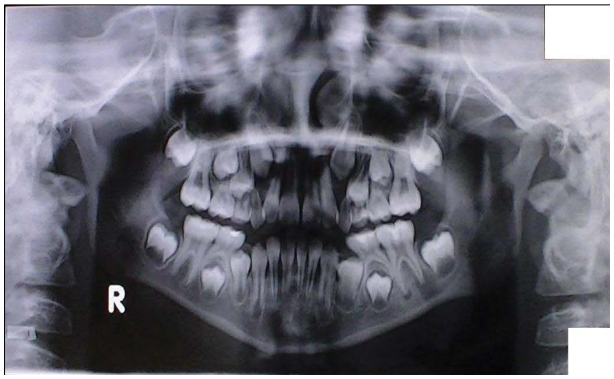

Figure 2: Orthopantomogram (OPG) showed retained roots of both deciduous lower left first molar 74, and deciduous lower right first molar 84 and apical radiolucencies at permanent lower left first molar 36

Re-appointment was scheduled on the next day for follow-up.

One of the treatment options for this patient would be removing the pulp through root canal treatment (RCT) in multiple visits and observe the subsiding and recovery of the surrounding bone and the healing of the fistula. Since the infection has been there for over 6 months and draining from the face, the use of a diode laser for disinfection before obturation for root canal treatment was also recommended. Another treatment option would be an extraction of the tooth. Both treatment options needed follow-up to monitor the recovery by orthopantomogram (OPG).

Considering the multiple visits required by root canal treatment and also cost and time involvement by the patients, the patient finally had the tooth 36 extracted under Monitored Anaesthetic Care. There were no adverse and unanticipated events in the treatment.

During the review, the dentist explained the conditions and OPG findings (Figure 3) to the father of the patient. The bone was healed, and the lower left second molar was likely to occupy the original space of the extracted lower left first molar. The patient was symptom-free but with a scar (Figure 4).

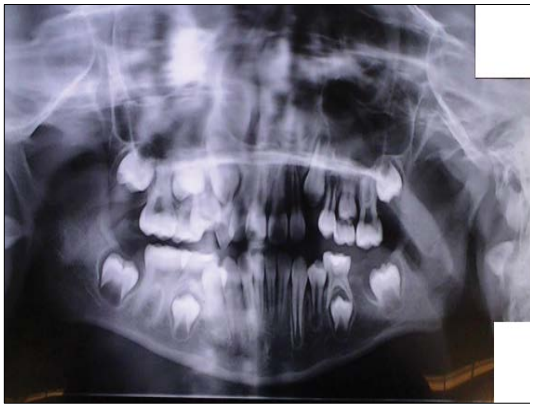

Figure 3: The radiolucency at distal root region of lower left first permanent molar 36 disappeared. The developing lower left second permanent molar 37 is migrating to the 36 space. It might not fully occupy the space

Figure 4: Scar

DISCUSSION

Previous literature has shown misdiagnoses by physicians and/or dermatologists as dermatological problem are not uncommon [1-4], e.g. a simple cutaneous abscess [1]. Often patients of cutaneous sinus tract are misdiagnosed, and they seek help from dentist only after the initial therapy failed [1-3]. The time taken between the first presentation of symptoms and finally arriving a correct diagnosis could be lengthy, possibly even over 15 years [4].

Odontogenic infections can spread through fascial planes [5] and intracranially [6]. Except for intraoral abscess, it may also cause orbital cellulitis [7,8], may eventually leading to blindness [7], cavernous sinus thrombosis [9], brain abscess [6,10], and Ludwig's angina [11,12].

Misdirected therapies without treating the source of infection can be multiple to the patient, such as antibiotics [1,3,13,14], steroids [3] and surgical excisions [14]. An antibiotic course might result in a temporary amelioration of symptoms [3,14], the condition will recur unless the dental origin is cleared [3,5,14]. Treatments without removal of the source often delay the appropriate treatment and recovery [1-3,5,13,14].

Differential diagnosis of cutaneous sinus tract include suppurative apical periodontitis [3,15], osteomyelitis [3,14,15], congenital fistula [3,15], salivary gland fistula [3,14,15], an infected cyst [3,15] and deep mycotic infection [3,7]. The most common cause of cutaneous sinus tract of dental origin is periapical infection around the root apices of nearby carious or traumatised teeth [13].

Patients are usually not aware of intraoral symptoms and do not relate the skin lesion to the dental origin. Thus patients are likely to first seek help from physicians instead of dentists [2,16]. The consultation and opinion of a dentist are vital, as the periodontal disease [10] and a dead pulp [16] are the main sources to head and neck infection.

Referral to dentists, to perform complete extraoral and intraoral examination dental radiography [1,2,5,17] and pulp test [5,17] are procedures during the consultation; to eliminate the possibility of dental sources or to give definitive diagnosis due to dental origin is necessary during the differential diagnosis [1,5,14]. Proper referral

can avoid unnecessary investigations and treatments such as antibiotics [2] or surgical operations [1,2]. Also, prompt diagnosis and treatment could reduce patient discomfort, aesthetic problems, and complications such as sepsis and osteomyelitis [1,2]. Therefore physicians must be aware of this condition, and it is advised to refer the patient to dentists if seen any cutaneous lesion in the head and neck region to confirm whether the skin lesion is from dental origin [2,13].

In this case, the absence of an obvious decayed tooth hindered the parents to give the history of previous dental disease and treatment, and the filling covered the dead pulp. Therefore the 5 medical practitioners failed to relate the lesion to the dental origin and could not reach a correct diagnosis promptly. The patient was uncooperative during the dental consultation in this clinic that detailed intra-oral examination was not possible, filling over the affected tooth was revealed by the OPG (Figure 2). The patient had a filling on 36 done by a therapist, it means that she was very cooperative in the initial dental treatment, repeated curettage caused the un-cooperation, the last curettage was undergone in general anaesthesia, then dental examination and treatment became difficult led to extraction under Monitored Anaesthetic Care.

Asking the patient about relevant dental symptoms like a toothache might be helpful, but it is worthy to note that the condition could be painless if the pulp is completely dead. A portion of the patient does not have a toothache [2,18]. A history of a toothache in the affected area that resolved without dental intervention can be useful information [3], but this does not apply to this 8-year-old girl because there were treatment and a filling but failed. Pediatrics patient might not be able to describe their symptoms accurately. Pulp test is also not reliable because it depends on the response from the patient.

Superficial healing of the skin does not mean the recovery of the disease since the source remains, repeated abscess and fistula will recur. Standard treatment of cutaneous sinus tract of dental origin is the elimination of the source of infection by root canal treatment [1,3-5] or by extraction of affected teeth [1-4]. The drainage will cease eventually, and the tract will close, typically between 7 to 14 days [18]. The cutaneous lesion will heal eventually even without any surgical operation [4].

Patient's parents were advised if extraction of 36, in this case, did not ameliorate the symptom, biopsy on the skin lesion should be performed again for confirmation.

CONCLUSION

Diagnosis of cutaneous sinus tract of dental origin is difficult and requires multidisciplinary effort; it is advised medical practitioners to have appropriate and sufficient communication with dentists in order to have accurate diagnosis and treatment of these patients. Misdiagnosis and inappropriate treatments might physically, cosmetically, and even psychologically harm the patients, especially in paediatric patients. In this case, repeated curettage caused non-cooperation and led to one general anaesthesia at the last treatment from the plastic surgeon and one simple extraction by monitored anaesthetic care.

CONFLICT OF INTEREST

None declared. The patient was treated by the first author and consent was obtained from parents.

REFERENCES

1. Abuabara A, Schramm CA, Zielak JC, et al. Dental infection simulating skin lesion. Ann Bras Dermatol 2012; 87:619-621.
2. Cantatore JL, Klein PA, Lieblich LM, et al. Cutaneous dental sinus tract, A common misdiagnosis: A case report and review of the literature. Cutis 2002; 70:264-267.
3. Johnson BR, Remeikis NA, Van Cura JE, et al. Diagnosis and treatment of cutaneous facial sinus tracts of dental origin. J Am Dent Assoc 1999; 30:832-836.
4. Tidwell E, Jenkins JD, Ellis CD, et al. Cutaneous odontogenic sinus tract to the chin: A case report. J Int Endod 1997; 30:352-355.
5. Gupta M, Das D, Kapur R, et al. A clinical predicament-diagnosis and differential diagnosis of cutaneous facial sinus tracts of dental origin: A series of case reports. Oral Surg Oral Med Oral Pathol Oral Radiol Endod 2011; 112:e132-e136.
6. Schuman NJ, Turner JE Brain abscess and dentistry: A review of the literature. Quintessence Int 1994; 25.
7. Park CH, Jee DH, La TY, et al. A case of odontogenic orbital cellulitis causing blindness by severe tension orbit. J Korean Med Sci 2013; 28:340-343.
8. Embong Z, Ismail S, Thanaraj A, et al. Dental infection presenting with ipsilateral parapharyngeal abscess and contralateral orbital cellulitis: A case report. Malays J Med Sci 2007; 14:62.
9. Lai PF, Cusimano MD. The spectrum of cavernous sinus and orbital venous thrombosis: A case and a review. Skull Base Surg 1996; 6:53.
10. Mylonas AI, Tzerbos FH, Mihalaki M, et al. Cerebral abscess of odontogenic origin1. J Craniomaxillofac Surg 2007; 35:63-67.
11. Candamourty R, Venkatachalam S, Babu MR, et al. Ludwig's angina-an emergency: A case report with literature review. J Nat Sci Biol Med 2012; 3:206.
12. Young C. Editorial Case report Ludwig Angina–The longest distance in this planet. Adv Emerg Med 2018.
13. Yadav S, Malik S, Mittal HC, et al. Odontogenic cutaneous draining sinus. J Craniofac Surg 2014; 25:e86-e88.
14. Sammut S, Malden N, Lopes V, et al. Facial cutaneous sinuses of dental origin: A diagnostic challenge. Br Dent J 2013; 215:555.

15. Wood NK, Goaz PW, Alling CC. Differential diagnosis of oral lesions. St. Louis: Mosby 1991.
16. Belmehdi A, El Harti K, El Wady W, et al. Esthetic improvement of a nasolabial cutaneous sinus tract. Contemp Clin Dent 2018; 9:314.
17. Mittal N, Gupta P. Management of extra oral sinus cases: A clinical dilemma. J Endodont 2004; 30:541-547.
18. Janev E, Redzep E. Managing the cutaneous sinus tract of dental origine. Open Access Maced J Med Sci 2016; 4:489.