INFECTED RADICULAR CYST INVOLVING FOUR LOWER INCISORS:
SHORT REVIEW AND CASE REPORT

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ABSTRACT

Radicular cyst of both jaws is an odontogenic in origin. It is usually a chronic inflammatory change to the epithelial rest of malasses in the periodontium of the affected teeth. Chronic irritations of such lesions involve chronic trauma, microbial infections and chemical injury. A 47 years old female patient came to the periodontal clinic complaining of an intra and extra oral swelling affecting anterior lower jaw with a chin fistula. Clinical presentation and radiographic investigation were suggestive of radicular odontogenic cyst involving lower central incisors. This case was managed by surgical enucleation, root canal treatment and followed up for two years.

Key Words: Odontogenic Radicular Cyst, Root canal treatment, Bone graft and collagen membrane.

INTRODUCTION

A cyst can be defined as a pathological cavity usually inside bone lined interiorly by epithelium and exteriorly by connective tissue filled with fluid or semifluid. Cysts can be classified as developmental or odontogenic. Radicular cysts of both jaws are an odontogenic in origin. It is usually a chronic inflammatory change to the epithelial rest of malasses in the periodontium of the affected teeth. Chronic irritations of such lesions involve chronic trauma, microbial infections and chemical injury. Such irritations irritate the pulps of involved teeth leading to necrosis and subsequently chronic apical periodontitis which provoke the dormant cells to proliferate and initiate cystic degeneration. Among cysts affecting the jaws, about 65-70% are radicular cysts at the apex of the involved teeth. The treatment choice for radicular cysts depends on aetiology, location and size of the lesion. Small size cysts can be treated conservatively via root canal treatment while large size can be treated surgically by enucleation and apicectomy using orthograde and retrograde obturation technique. When the involved tooth or teeth is/are hopeless or non-strategic, enucleation of the cyst followed by extraction of involved tooth or teeth is recommended. The cystic wall must be totally enucleated surgically to prevent recurrence of the lesion. This case report presents a successful surgical management of large infected radicular cyst that involved 4 lower incisor teeth.

CASE REPORT

A 47 years old female patient came to the periodontal clinic at the department of dentistry, Prince Hashim Hospital (PHH), Zarka, Jordan complaining of an intra and extra oral swelling affecting anterior lower jaw with a chin fistula since 3 months. Clinical presentation and radiographic investigation were suggestive of infected radicular odontogenic cyst involving four lower central incisors. Orthopantomogram revealed generalized horizontal bone resorption surrounding the necks of anterior teeth of four lower incisors indicating generalized periodontitis case. Radiolucency was single, large and well defined of size 2 cm × 2 cm extending supero-inferiorly from periapical region of four lower incisors to 2.5 cm above lower border of mandible. All four lower incisors were nonvital on examination and on vitality tests.

Treatment of radicular cyst involves a complete surgical excision (enucleation) of the cyst and root canal treatment of all nonvital teeth. In this case it was decided to merge both surgical and nonsurgical...
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Fig 1: Orthopantomogram revealed generalized horizontal bone resorption

Fig 2: Envelop flap

Fig 3: Sinus tract was excised and intimately sutured

Fig 4: Bone graft granules

Fig 5: Collagen membrane

Fig 6: GP obturation

Fig 7: Vicryl 4/O suture

Fig 8

Fig 9: Healing of sinus tract

Fig 10: Healing of gingiva
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In this case it was clear that the apparent causes were endodontically involved anterior teeth and chronic periodontitis were evident for the formation of the radicular cyst. The infection might have started with mandibular anterior teeth. The cyst was infected and drain through the extraoral sinus tract resulting in apical periodontitis which also had a negative effect on marginal periodontitis potentiating it.9 Bone resorption around the apices of four lower incisors results in deprivation of these teeth from blood supply resulting in pulpal necrosis and inflammation.11

Root canal treatment of such teeth alone without surgery will never result in complete healing since the cyst was very large and infected with mixed bacterial media. It is well-established that root canal infection is the cause of primary and post-treatment apical periodontitis.10-14

Besides inflammatory apical true cysts has been suggested as a possible cause that prevents healing of apical periodontal lesions. Because these agents exist outside the root canal system, endodontic retreatment is unlikely to resolve the factors that sustain the periapical lesion. Therefore, apical surgery is indicated for successful treatment of such cases.14 It is also widely believed in the endodontic microbiology and described in several endodontic textbooks that large cyst-like periapical lesions and apical true cysts are most likely not able to heal without surgical root canal therapy alone.15-17

Apical periodontitis due to periapical infected cyst or chronic abscess can be treated by conventional root canal therapy when the lesion is small. Both surgical and nonsurgical combination endodontic treatment is indicated in large periapical lesions.18,19 In this case the suitable solution was enucleation of the cyst and root canal therapy at the same time which was good option for the patient with poor compliance.15-17

CONCLUSION

Etiology of large radicular cysts involve mainly endodontic infections. Clinical and radiographic investigation are necessary to establish appropriate diagnosis which enable the clinician to achieve suitable and more conservative treatment option to save the integrity of both soft and hard tissues i.e. teeth and bone.

REFERENCES

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CONTRIBUTION BY AUTHORS

1 Yahya MA Draidi: Main author and coordinate the whole case.
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3 Mashhoor Abdo Al-Wraikat: Editing and did RCT trt.
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