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Original Research

To assess the causes of endodontic failures in study groups

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***ABSTRACT*:**
Background: Endodontic therapy or root canal therapy is a treatment sequence for the infected pulp of a tooth which results in the elimination of infection and the protection of the decontaminated tooth from future microbial invasion. The present study was conducted to assess the causes of endodontic failures in study groups. **Materials & Methods:** The present study was conducted on 112 patients with 160 root canal treated teeth. The presence or absence of periapical radiolucency, quality of obturation, missed canal, dislodged/fractured restorations, iatrogenic problems: perforation, file separation, ledges etc was assessed with the help of intraoral periapical radiographs. **Results:** Out of 112 patients, males were 60 and females were 52. Males had 85 and females had 75 teeth. Common reason of endodontic failure was missed canal 30% in males and 40% in females, inadequate obturation 25% in males and 10% in females and fractured coronal obturation 45% in males and 50% in females. The difference was significant (P<0.05). **Conclusion:** Author found that common reasons of root canal failures are missed canal, inadequate obturation and fractured coronal obturation.
Key words: Endodontic, Failure, Obturation

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Introduction

Endodontic therapy or root canal therapy is a treatment sequence for the infected pulp of a tooth which results in the elimination of infection and the protection of the decontaminated tooth from future microbial invasion.[1] It is widely used phenomenon in cases of apical periodontitis, periapical abscess, granuloma and cysts. The effectiveness of the treatment depends upon the careful following of all steps such as access opening, biomechanical preparation, obturation and restoration.[2] The term success or failures in endodontics must be defined rigidity, in order to be meaningful. A clear definition & agreement of what constitute a failure following endodontic treatment does not exist among endodontist. The dentist had reduced criteria for success of endodontic treatment to a very narrow definition to absence of pain. How convenient it would be if this concept could be totally accepted. Unfortunately absence of pain is not completely a reliable measure for good health or success in endodontic treatment.[3] Increased dental patient education and awareness in conjunction with technological advancements have helped to promote the view that dentition should remain throughout people's lives. As a result, the need for

performing conventional non surgical root canal therapy also has increased dramatically. Endodontic treatment has failure rates also.[4] The present study was conducted to assess the causes of endodontic failures in study groups.

Materials & Methods

The present study was conducted in the department of Endodontics. It comprised of 112 patients with 160 root canal treated teeth of both genders. All patients were informed regarding the study and written consent was obtained. Ethical clearance was obtained prior to the study.

General information such as name, age, gender etc was noted. The presence or absence of periapical radiolucency, quality of obturation, missed canal, dislodged/fractured restorations, iatrogenic problems: perforation, file separation, ledges etc was assessed with the help of intraoral periapical radiographs. Results thus obtained were subjected to statistical analysis. P value less than 0.05 was considered significant.

Results

Table I Distribution of patients

Total- 112		
Gender	**Males**	**Female**
Number of patients	60	52
Number of teeth	85	75

Table I shows that out of 112 patients, males were 60 and females were 52. Males had 85 and females had 75 teeth.

Graph I Distribution of patients

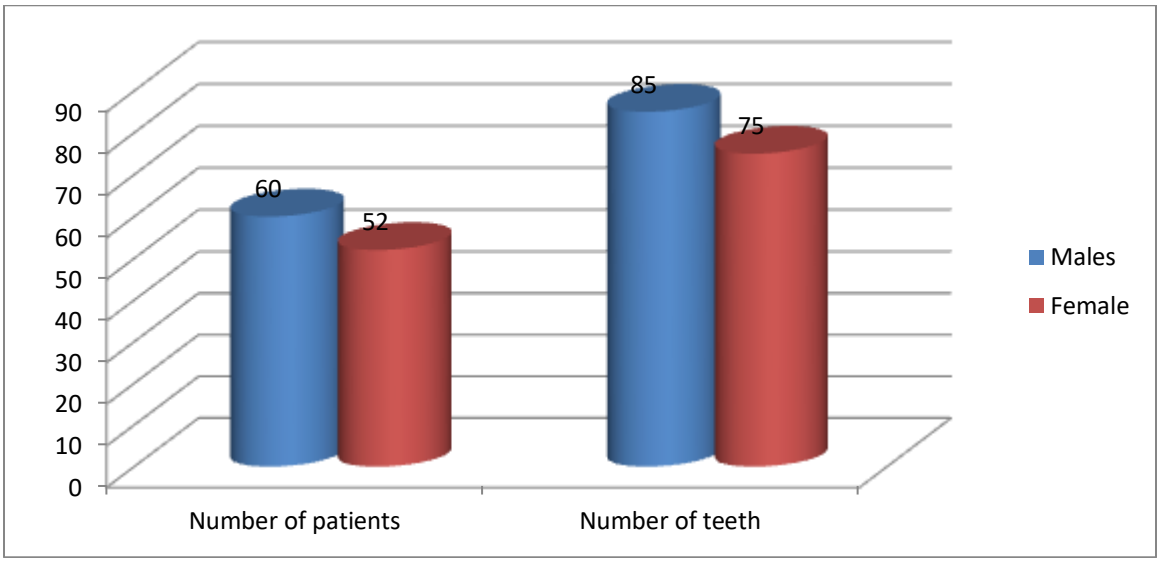
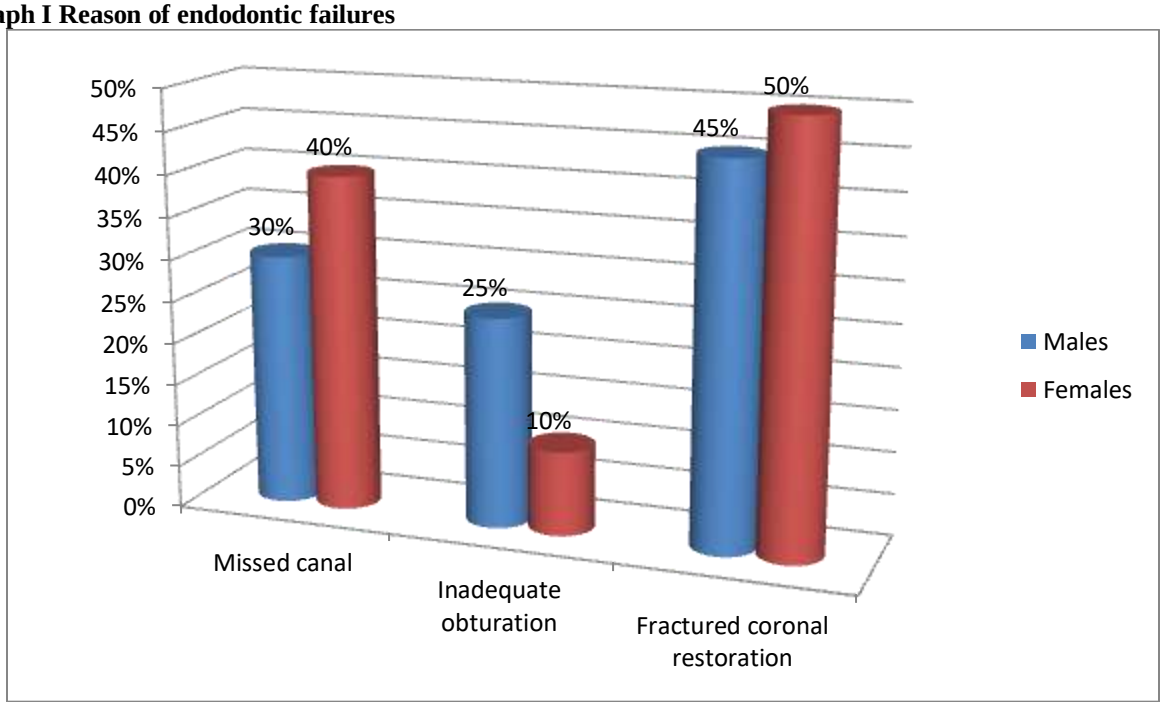


Table II Reason of endodontic failures

Reasons	Males	Females	P value
Missed canals	30%	40%	0.07
Inadequate obturation	25%	10%	
Fractured coronal restoration	45%	50%	

Table II shows that common reason of endodontic failure was missed canal 30% in males and 40% in females, inadequate obturation 25% in males and 10% in females and fractured coronal obturation 45% in males and 50% in females. The difference was significant (P<0.05).

Graph I Reason of endodontic failures



Discussion

Countless peoples are living today with some disease in its pain free stage after endodontic treatment. Endodontic treatment apparently success's in some cases in spite of, our best efforts. These fortunate circumstances can also be attributed to a tremendous capacity of body's natural defence to cope with infections and to enhance the body's survival rate.[5] Practicing endodontist should know that lack of pain is not sole criteria of success of endodontic treatment, but they would be hard pressed to present universally acceptable criteria for success or failures. Endodontic failure still occurs for a variety of reasons, and presence of clinical signs and symptoms along with radiographic evidence of periapical bone destruction indicates the need for re-intervention. The first and most important step is to determine the cause of endodontic failure. Normally, the etiologic factors of endodontic failure can be placed into four groups: (1) persistent or reintroduced intra-radicular microorganism, (2) extra-radicular infection, (3) foreign body reaction, and (4) true cysts.[6] The present study was conducted to assess the causes of endodontic failures in study groups.

In present study, out of 112 patients, males were 60 and females were 52. Males had 85 and females had 75 teeth. Instruments may break during root canal treatment. The file segment may be left behind if an acceptable level of cleaning and shaping has already been completed and attempting to remove the segment would risk damage to the tooth. While potentially disconcerting to the patient, having metal inside of a tooth is relatively common, such as with metal posts, amalgam fillings, gold crowns, and porcelain fused to metal crowns. The occurrence of file separation is proportional to the narrowness, curvature, length, calcification and number of roots on the tooth being treated.[6]

The presence of denticles in the root canal complicates endodontic therapy. When situated in apical third of root canal, denticles enhances the possibility of breakage of barbed broach especially there is defect in steel. Consequently barbed broach should neither be introduced into tight canal, not they should be used for enlargement of canal but merely to engage the pulp tissue for removal. Commercially available retrieval kits can also be used for broken instrument removal.[7]

The presence of infected & necrotic pulp tissue within root canal act as a continuous irritant to the periapical tissue & there necessitate through debridement of root canal. Ostrander E C claimed that some endodontic cases probably fail because strictly aseptic technique was not followed & new microorganism introduced into the root canal during treatment. Olcay et al, of the 1000 endodontically failed teeth, 28.1% were extracted, 66% (n = 660) were re-treated, and 5.9% (n = 59) were treated with apical surgery. Among the reasons for failure, restorative and endodontic reasons were seen most frequently (43.9%, n = 439), whereas orthodontic reasons were seldom seen (0.1%, n = 1). The most common reason for extraction was for prosthetic reasons (40.8%), and perforation/stripping was the least common (2.9%). The mandibular first molars were the most frequently extracted teeth (27.4%, n = 77).[8, 9]

Conclusion

Author found that common reasons of root canal failures are missed canal, inadequate obturation and fractured coronal obturation.

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