Many dentists believe that procedural errors in daily practice, such as over-filling, i.e. the contact of filling materials, generally gutta-percha and ZOE (Zinc Oxide Eugenol) sealer with the periradicular region in endodontically treated teeth are a direct cause of endodontic failure.

A number of Authors reported the negative impact of over-filling on the predictability of endodontic treatment and have highlighted the following:
1) The incidence of post operative pain as well as flare-ups
2) The toxicity of materials
3) Permanent irritation of periradicular tissues ranging from mild inflammations to foreign body reaction.

In contrast, other reports claim that, while overfilling should be avoided, its presence does not directly favor endodontic treatment failure by itself.

Ingle states that in Endodontics one achieves a high success rate in spite of overfilling. Schilder said he has never found a case of failure specifically secondary to overfilling. Weine states that luckily, since gutta-percha is so well tolerated by periapical tissue, it is a rare finding to see an over-filling in conjunction with a post-treatment failure. Most instances show no abnormal radiographic evidence, and, in some cases, there is an actual amputation of the overfilling with phagocitosis of the extra mass.
Img. 1 - First right mandibular molar with an infiltrated amalgam, and underfilled canal obturation. After retreatment the Rx shows three-dimensional endodontics and slight surplus after filling on mesial canals obturated with Thermafil #25 and distal canal with warm vertical condensation. After 5 years the excess has disappeared and periapical tissues are in healthy conditions. These conflicting results can be attributed to differences in study methodology and to the diversity in composition of the extruded materials. Generally the most common causes are related to differences in apical anatomy hampering the performance of endodontic procedures in a variety of clinical situations.
Img. 3 - Typical aspect of overfilling: note the scratch on the cone.

Img. 4 - Apical foramen is completely filled.
Img. 5 - Correct extension of the obturation but underfilling of canal. Notice the apical transportation during shaping procedure. Courtesy of Dr. M. Vitullo

Img. 6 - Post-operative radiograph of a mandibular first molar reveals a large apical lesion of endodontic origin. Mesial canals were obturated with Thermafil. A 4-year recall demonstrates osseous repair. Filling excess has not prevented bone healing.
Thermafil carrier overfilling on distal root. Thermafil is a good technique for obturation as long as protocol is respected. Notice extrusion of the carrier and underfilled obturation. After 6 months the lesion looks smaller than pre-op Rx and the patient reports disappearance of pain during function.
Countless cases have been successfully performed as evidenced by clinical and radiographic long-term healing, which should assure patients, doctors, and any prosecuting attorneys.

References


Visit: http://www.styleitaliano.org/overfilling