REVIEW OF LITERATURE

1. **Schilder H² (1967)** reviewed the obturation techniques and stated that the ultimate objective of endodontic procedures is the elimination of the source of infection which is possible by cleaning and shaping of the canals and filling them with a dense three dimensional root canal fillings.

2. **De Almeida W A et al¹⁹. (2000)** evaluated the apical sealing ability of three different endodontic sealers in extracted teeth using dye penetration. The root canals of 99 freshly extracted human maxillary central incisors were prepared, teeth were divided into three experimental groups, group I zinc-oxide eugenol sealer (fill canal) group 2 glass ionomer sealer (Ketac–Endo) and group 3-epoxy resin sealer (AH-Plus) and teeth were obturated by lateral compaction of cold gutta-percha. Statistical evaluation of the results showed no significant difference in the leakage between fill canal and Ketac–Endo. Leakage with AH-Plus was significantly less than with the other sealers.

3. **Gencoglu N et al¹⁷. (2002)** calculated the core gutta-percha or the carrier/sealer ratio and the sealing ability of different gutta-percha techniques, Thermafil, J S Quickfil, System B and Lateral Compaction. Through use of these techniques in-vitro, Thermafil and JS Quickfil with carrier and System B were found to be superior to the lateral compaction technique in terms of core/sealer ratio. Thermafil and JS Quickfil were superior to lateral compaction in terms of dye leakage.

4. **Ruddle C J¹⁸ (2005)** introduced the ProTaper geometrics, technique and finishing criteria. He found that ProTaper instruments provide different geometries when used correctly, affords extraordinary flexibility, efficiency, safety, simplicity, and its sequence always remains the same tooth or anatomical configuration of the canal being treated.

5. **Marciano M. et al¹⁰. (2009)** showed the use of confocal laser scanning microscope (CLSM) in endodontic research. It is used to obtain a series of optical XY images through the thickness of the dentin. He compared the SEM with Confocal
microscope and showed that confocal microscope has the advantage of providing accurate information and a simple method to determine the adaptation and distribution of sealers through the use of Rhodamine-marked sealers.

6. **Kontakiotis EG et al.** (2012) evaluated the penetration of endodontic sealer into the dentinal tubules, the sealer layer perimeter, and the sealer area at the apical third after different filling techniques by confocal microscope. Forty-five mandibular premolars were obturated with AH Plus sealer and three different obturation system, single master cone technique, cold lateral compaction and thermafil technique. They concluded that thermafil group showed smaller sealer areas while cold lateral compaction and single master cone showed similar areas. The impregnated area was not dependent on the filling technique and thermafil showed in a significantly thinner sealer area.

7. **Lumbini Pathivada et al.** (2013). Smartseal: New Age Obturation Smartseal is a recently introduced root canal obturation technique based on polymer technology. Its basic principle is based on hydrophilic nature of the obturation points which can absorb surrounding moisture and expands in resulting and filling of voids and spaces. Smartseal has been widely reported to be very successfully used in endodontic obturation therapy.

8. **Krishnan Hari et al.** (2014). Water-Expandable Endodontic Obturation Point: A Review. Stated that proper seal at the coronal, middle and the apical end of a root canal is achieved only if the material has the ability to seal the root canal dentin in all directions. A new self-sealing root canal obturation system called as C-points (EndoTechnologies, LLC, Shrewsbury, MA) based on polymer technology has been introduced which undergoes lateral hygroscopic expansion when in contact with moisture in the root canal. The aim of this review is to provide a basic overview of its composition and properties after analyzing few related studies.