

# 360° drying in the root canal – clinical experience with the new Surgitip-endo aspirator tip for root canals

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**The international dental specialist COLTENE has added the Surgitip-endo endodontic aspirator tip to its ROEKO Surgitip product line.**

Surgitip-endo has been specially developed for drying root canals and its flexible front section allows comfortable insertion in hard-to-reach root canals (mesiobuccal 1 and mesiobuccal 2 in the maxillary molar and mesiobuccal and distolingual in the mandibular molar) without having to bend the tip of the aspirator. This was achieved by developing a special multi-part fully rotating ball joint. The Surgitip-endo can be used to dry root

canals quicker and more efficiently than is possible with paper points alone.

The initial clinical experience with the Surgitip-endo is presented below.

From a visual point of view, it is immediately obvious that the Surgitip-endo belongs to the Surgitip family which includes the Surgitip (surgical aspirator tip) and the Surgitip-micro (microsurgical aspirator tip). All aspirators are characterised by the green tip which provides excellent contrast in the operating field. The sales pack contains 20 sterile, individually packaged Surgitip-endo aspira-

tor tips (Fig. 1). The aspirator tip is ready for immediate use and can be hygienically removed from the pack and connected without any contact. The included autoclavable Double Adapter allows alternative connection to the standard water aspirator hose (Fig. 2) and the saliva aspirator hose. The aspirator tube can be held like a pencil without any difficulties and ensures a firm grip and comfortable work position (Fig. 3).

The outer diameter of the canal tip corresponds to ISO 60, the inner diameter is 0.35 mm and therefore, optimally adapted to the prepared ISO sizes of root



Fig. 1: Surgitip-endo sterile, hygienically, individually packaged



Fig. 2: Surgitip-endo with adapter for standard water aspirator hose



Fig. 3: Holding the Surgitip-endo



Fig. 4: Curved tip in tooth 46



Fig. 5: Elast-Dam, extra-elastic, powder-free latex dental dam



Fig. 6: HYGENIC colour-coded dental dam clamps for fixation of the dental dam

canals. In addition, the three-dimensional rotational flexibility of the tip is a notable feature. Due to the special ball design, the tip is highly flexible and thus ensures unrestricted high suction performance together with an optimal view of the field of treatment (Fig. 4).

The clinical applications of the Surgitip-endo were conducted during root canal treatments on a maxillary molar and a mandibular molar. A revision was performed on tooth 27 after locating a fourth root canal, and root canal treatment was performed on tooth 46 due to exacerbated chronic apical periodontitis with severely obliterated canals. As the golden standard, a dental dam (Elasti-Dam green; ROEKO, Fig. 5) was applied in both cases. Colour-coded Fiesta dental dam clamps (HYGENIC, Fig. 6) were used for fixation. Elasti-Dam is more elastic and tear resistant than standard latex dams, making application much easier. At the same time, Elasti-Dam is powder-free and

its reduced level of proteins lowers the risk of developing a latex allergy (Fig. 7).

After creating a glideslope for tooth 46 and completing the revision of tooth 27, the electrical length determination was then performed together with radiographic measurement in each case. During preparation of the the root canal (Fig. 8) using a standard mechanical preparation system available on the market, the canals were rinsed after each change of instruments according to the specific irrigation protocols (ROEKO), and dentin chips and tissue aspirated using a Surgitip aspirator tip.

After successful preparation of the root canal, chemo-mechanical rinsing and several weeks of inserted medication, the root canals were rinsed again and dried using the Surgitip-endo and paper points in a second sitting before obturation. The Surgitip-endo was inserted as deep as possible into the prepared ca-

nals (no tight fit) and the rinsing fluids aspirated using a light dabbing (up and down) motion. Removal of the rinsing solution or fluid from the canals was clearly audible. The view of the access cavity and root canals under the dental microscope was also unobstructed during aspiration (Figs. 9, 10 and 11. The pictures were taken with a video camera during the treatment).

For the final drying, significantly fewer paper points were necessary for complete and thorough drying of the canals (approx. three to five tips per canal depending on the preparation sizes) than for conventional methods with saliva ejector without cap and subsequent drying with paper points (Fig. 12).

After completed drying, both teeth were filled with customised gutta-percha points (ISO size, conicity and length) and GuttaFlow 2 (ROEKO, Fig. 13) and closed using a bacteria-proof composite filling.



Fig. 7: Dental dam isolation with Elasti-Dam of tooth 46 requiring treatment



Fig. 8: Root canal preparation of tooth 46



Fig. 9: Detectable residual fluid (reflexion) in the canals of tooth 27 after rinsing



Fig. 10: Aspiration of the residual fluid from the canals of tooth 27 using a Surgitip-endo (up and down motion)



Fig. 11: No detectable fluid on the pulpal floor and in the coronal region of the canals of tooth 27



Fig. 12: Final drying of tooth 27 using paper points

Thorough and efficient drying of the canals ensures increased adhesion of the filling material to the root canal walls.

As the Surgitip-endo has a very small inner diameter, tissue and larger particles should be aspirated using a Surgitip/ Surgitip-micro. To prevent the Surgitip-endo tips from clogging, the tips can be rinsed occasionally with water or, if clogged, flushed from the front using an irrigation cannula (Fig. 14).

In conclusion, here is a summary of the main advantages of the Surgitip-endo aspirator tips:

- Its innovative ball design ensures optimal aspiration and good canal access
- Surgitip-endo is ideally suited for work under the operating microscope
- Thorough drying of the canals optimises adhesion of the filling material to the root canal walls
- The time required for final drying of the canal with paper points is reduced significantly
- The canulas are sterile, individually packaged and ready for immediate use

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Fig. 13: GuttaFlow 2 for permanent filling of root canals

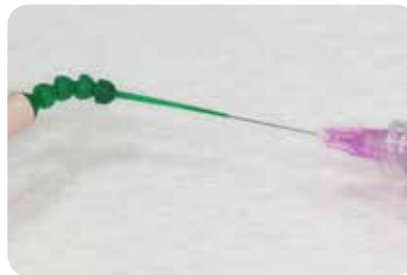


Fig. 14: Irrigation cannula in canal tip to flush the Surgitip-endo