

Smear layer removal evaluation

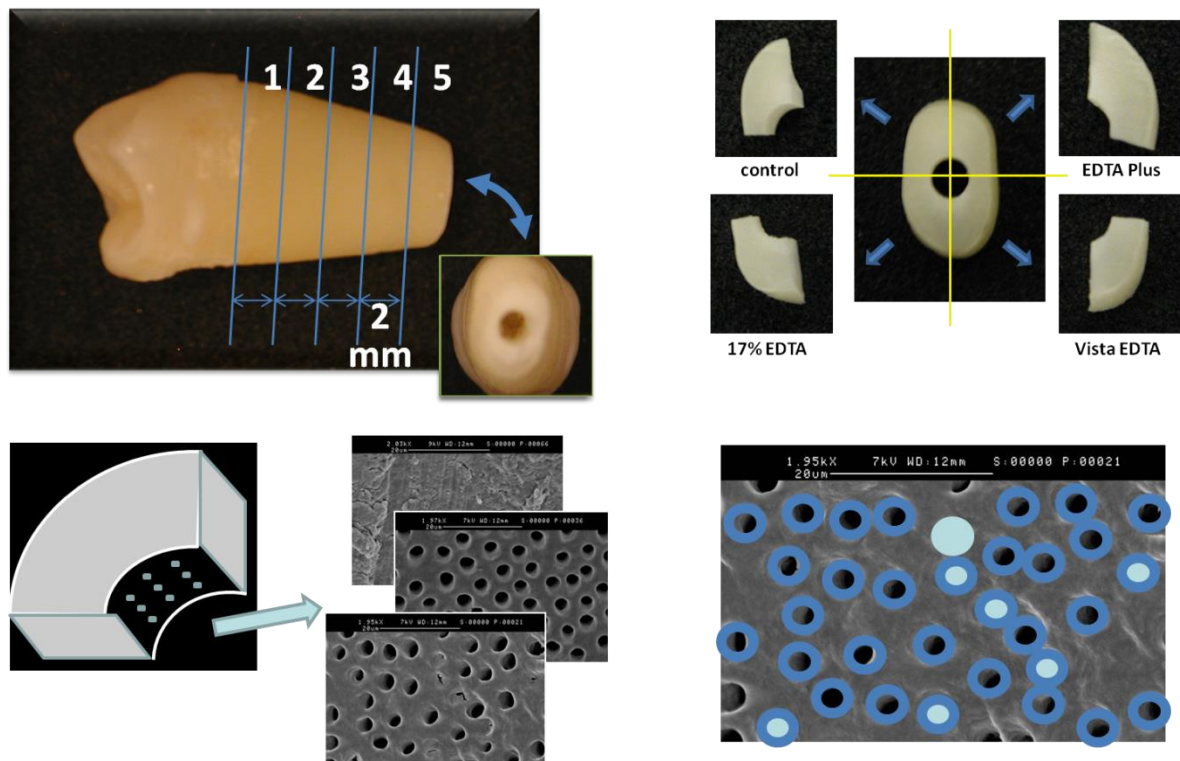
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Purpose:

To evaluate the smear layer removal performance of three chelating solutions. In particular, an experimental chelating product (SmearOFF - Vista Dental), EDTA-Plus (Essential Dental Systems) and standard 17% ethylenediaminetetraacetic acid (EDTA) aqueous solution (VWR Chemicals) were analyzed.

Materials & Methods:



- Five teeth
- 25 root slices
- 100 dentin quadrants
- 9 randomly (stratified sampling) selected SEM images taken of each = 900 images
- 40 – 100 dentin canals counted in each SEM image = 36.000 – 90.000 dentin canals counted

Counting done manually because automated programs cannot reliably decide whether a canal (tubules) is open or closed.

Results:

The table shows the % of open dentin canals (tubules) of all canals

	Tooth	17% EDTA	Vista SmearOFF	EDTA+
17-May	1	52.82	69.51	54.12
24-May	2	57.04	60.47	52.66
18-Jun	3	64.45	80.94	53.42
26-Jun	4	66.27	60.38	61.95
5-Jul	5	69.23	82.78	58.67
Mean		61.96	70.82	56.16
SD		6.81	10.76	3.99

Conclusions:

Vista SmearOFF significantly removes more smear layer than standard 17% EDTA and EDTA-Plus. Vista SmearOFF provides superior canal cleaning in a clinically relevant irrigation time point.