Atraumatic extractions with Luxator Periotome

Dr Simon Jones discusses why he prefers using Luxators for extractions

The extraction of a tooth is probably the most traumatic event a patient can experience in the dental surgery, and if the extraction doesn’t go smoothly, things can become quite stressful for the dentist too! When the use of a simple surgical instrument can make the extraction process infinitely easier for both patient and dentist, I find it surprising that not all dentists reach for a Directa Dental Luxator as their first instrument of choice.

To understand how best to remove a tooth, it helps to appreciate the structures and forces that are holding the tooth in position. It is only by overcoming these forces that the tooth can be removed.

First to consider is the bone structure surrounding the roots. As the bone sits intimately against the root surface, any irregularities, undercuts or curvatures of the root will provide mechanical retention. To overcome this retention the socket must be dilated until the path of removal of the root is unimpeded by bone.

The second factor resisting the removal of the tooth is the periodontal ligament, composed of collagen fibres. Like millions of little guy ropes, the cumulative strength of these fibres resist the strongest of biting forces. Imagine how much force would be required to overcome their combined strength in an attempt to simply pull out a tooth.
The third force to be overcome is that of atmospheric pressure. Withdrawing a tooth from its socket will create a void or vacuum at the apex of the socket, and until this void is filled with blood or the ingress of air, then atmospheric pressure will effectively push on the tooth to keep it in position. Anyone who can remember back to the Magdeburg Hemisphere experiment in school physics will know that simple atmospheric pressure resisted the force of two teams of horses pulling in opposite directions.

Little wonder then that simply using a combination of forceps and brute force can lead to unnecessary loss of alveolar bone, root fracture, and a subsequently more stressful and stress-free process.

The Luxator should be inserted around as much of the circumference of the root as possible to evenly dilate the socket. Once this has been achieved, then the final delivery is performed. When using a Luxator, the uniquely designed handle should sit neatly in the palm of your hand, and fingers extended towards the tip of the instrument (Fig. 5). This allows for precise control of the tip and prevents the risk of slipping. Excessive force should be avoided; the Luxator is a surgical instrument, and should be used as such, not as an elevator.

To complement their range of Luxators, Directa now produce an elevator called the Luxator Forte. Having dilated the socket using a Luxator, if it is felt that greater dilating and elevation forces are required then the stronger Luxator Forte should be used. The Forte is easily recognisable by its black handle (Fig 4). This sequence of luxation followed by elevation generally means that forceps are only ever used for the final easy delivery of the tooth.

The Swedish dental company Directa not only invented the name ‘Luxator’, but have developed this range of instruments to perfection. The use of high-grade surgical steel blades and a two-part moulding technique for the uniquely ergonomic polymer handle combine to provide a high-quality instrument that will give years of reliable service, and endure countless cycles of dishwasher disinfection and autoclaving.

Having used Luxators for more than 20 years, I cannot imagine undertaking the extraction of any tooth without first severing the periodontal fibres with my trusty friend. It would be the equivalent of struggling to remove my boots without first undoing the laces. The careful and considered use of a Luxator helps the dentists to divide and conquer the forces retaining a tooth.

The appropriate size of Luxator is chosen to match the diameter of the root, and the angle of the blade is chosen to give the best access. The tip of the Luxator is gently inserted into the gingival margin, with the blade angled slightly towards the root surface. This ensures the Luxator enters the periodontal ligament between the crestal bone and the root. Once in the periodontal ligament the Luxator is worked down the length of the root with a side to side rocking motion and steady axial pressure (Fig 2). This motion first severs the periodontal fibres, then as the blade is introduced further, the socket is diluted to allow an easier path of removal. Finally, as the periodontal ligament is severed and the socket dilated, bleeding and air ingress overcome the vacuum that resists tooth removal.

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