**Critically Appraised Topic (CAT)**

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| **Project Team:** |
| **6B-2** |
| **Project Team Participants:** |
| D4-Patel, Roshan   D3-Desai, Akshat   D2-Shambeau, Elliot   D1-Hoffins, Evan |
| **Clinical Question:** |
| Is there a better prognosis for impacted maxillary canines and the dentition when the canine is treated versus leaving it untreated? |
| **PICO Format:** |
| **P:** |
| **Patients with impacted canines** |
| **I:** |
| **Surgically assisted orthodontic treatment** |
| **C:** |
| **No treatement** |
| **O:** |
| **Better prognosis** |
| **PICO Formatted Question:** |
| Do patients that have surgically assisted orthodontic treatment of impacted maxillary canines have better prognosis than patients who do not treat their impacted maxillary canines? |
| **Clinical Bottom Line:** |
| **Surgical extrusion of impacted canines is recommended as it prevents further root resorbtion in the adjacent teeth and reduces the incidence of root resorbtion in the incisors teeth after the procedure.** |
| **Date(s) of Search:** |
| **10/1/2020 10/4/2020** |
| **Database(s) Used:** |
| **Pubmed** |
| **Search Strategy/Keywords:** |
| **Canine, orthodontic surgery, retention, Maxillary retention, esthetic** |
| **MESH terms used:** |
| **Maxilla, canines, root resorbtion, tooth eruption, Humans, impacted** |
| **Article(s) Cited:** |
| **1)**D'Amico, Rozmary Mak, et al. "Long-term results of orthodontic treatment of impacted maxillary canines." *The Angle Orthodontist* 73.3 (2003): 231-238  2)Becker, Adrian, Gavriel Chaushu, and Stella Chaushu. "Analysis of failure in the treatment of impacted maxillary canines." *American Journal of Orthodontics and Dentofacial Orthopedics* 137.6 (2010): 743-754.  3)Oz, A. Z., and S. Ciger. "Health of periodontal tissues and resorption status after orthodontic treatment of impacted maxillary canines." *Nigerian journal of clinical practice* 21.3 (2018): 301. |
| **Study Design(s):** |
| 1. Indivudial cohort study 2. Indivudial cohort study 3. Indivudial cohort study |
| **Reason for Article Selection:** |
| **I selected these articles as it directly answered the pico question and I wanted to see the impact of orthodontic on the impacted canines themselves and the adjacent teeth, these articles look at factors including rooth health, root resorbtion, periodontal health and esthetics of the teeth over a period of time. One of the studies also talks about patient satisfaction in terms of esthetics as the teeth atr in the anterior region of the mouth.** |
| **Article(s) Synopsis:** |
| 1. **This study was designed to look at longterm prognosis of impacted maxillary canines and its adjacent teeth after the surgical exposure of the maxillary canine and fixed orthodontic appliance. 61 childten with impacted canines were evaluated for 10.9. In some cases where the lateral root resorbtion was too high the lateral incisors were extracted and the canines were orthodontically moved next to the centeral incisors. The study showed good longterm prognosis and only 4 of the 61 patients were unsatisfied with the esthetic outcome, it is important to note that all these cases included the extraction of the lateral incisor and mesial shift if the canine to fill the gap in the anterior region.** 2. **This was designed to look at reasons for failure of orthodontic treatement of impacted canines, the study also looks ath the corrective measures taken after the initial failure. The reasons for failure were mainly plain radiographs and intra arch anchorage**   **3) This study was designed to look at the change in incisor rooth resorbtion and and effect of impacted canines on the periodontal health of the lateral incisors. The study used CBCT to look at root resorbtion in the canines and the adjacent teeth before and after the surgery to extrude the impacted canines. There was repair in root resorbtion after the orthodontic treatement** |
| **Levels of Evidence:** (For Therapy/Prevention, Etiology/Harm)  See <http://www.cebm.net/index.aspx?o=1025>  **1a** – Clinical Practice Guideline, Meta-Analysis, Systematic Review of Randomized Control Trials (RCTs)  **1b** – Individual RCT  **2a** – Systematic Review of Cohort Studies  **2b** – Individual Cohort Study  **3** – Cross-sectional Studies, Ecologic Studies, “Outcomes” Research  **4a** – Systematic Review of Case Control Studies  **4b** – Individual Case Control Study  **5** – Case Series, Case Reports  **6** – Expert Opinion without explicit critical appraisal, Narrative Review  **7** – Animal Research  **8** – In Vitro Research |
| **Strength of Recommendation Taxonomy (SORT) For Guidelines and Systematic Reviews**  See article **J Evid Base Dent Pract 2007;147-150**  **A** – Consistent, good quality patient oriented evidence  **B** – Inconsistent or limited quality patient oriented evidence  **C** – Consensus, disease oriented evidence, usual practice, expert opinion, or case series for studies of diagnosis, treatment, prevention, or screening |
| **Conclusion(s):** |
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