ABSTRACT

Objective: To evaluate the effectiveness of the computer-assisted intraosseous injection (CAIO) with Quick sleeper in lower third molar surgery.

Materials and Methods: The study is a clinical single blind randomized split mouth controlled trial. There are 25 volunteers with the mean age of 21 years old, consisting of 10 males and 15 females. The patients underwent two surgical removal of lower third molar with two different injection techniques. If one side were injected with Quick sleeper, another side would be injected with conventional syringe in IANB technique. Both techniques used a cartridge (1.7ml) of 4% Articaine with 1:100,000 epinephrine. Supplementary injection was tended to use if necessary. All volumes of anesthetic agent used were recorded. Paired t-test and Wilconxon were used to calculate for statistical analysis.

Results: The result shows that CAIO has faster onset and shorter duration of action than IANB, which is statistically significantly different (P-value<0.05). Pain during injection is not different in both techniques. It is noticeable that in CAIO group, one third of the cases could be completed without additional anesthesia. Another one third could be finished with minimal supplementary volume of anesthesia. The success rate of the study is 68% and 72% in CAIO and IANB, respectively.

Conclusion: It is concluded that CAIO provides faster onset and short duration of anesthesia than IANB. CAIO could be an alternative injection technique to perform lower third molar surgery.
GORLIN-GOLTZ SYNDROME

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CONTENTS

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**BACKGROUND**

**Gorlin-Goltz Syndrome (GGS)**
- Neviod basal cell carcinoma syndrome
- First described in 1960
  - **Robert W. Goltz**: American dermatologist (1923–2014)
- A rare autosomal dominant inherited disorder
- Prevalence: (1:50,000 - 150,000)
- Male: Female (1:1)

(Neville, Damm, Allen & Bouquot 2008)

**BACKGROUND**

**To diagnose of GGS is based on**

A. 1-2 major criteria and
B. 2 minor criteria

**Major criteria**
- More than 2 BCCs or one in a patient less than 20 years old
- Multi OKCs
- Calcifications of the falx cerebri and tentorium
- 3 or more palmar or plantar pits
- Bifid, fused, or markedly splayed ribs

(Aloosi et al. 2018, pp. 3)
BACKGROUND

Minor criteria
• Macrocephaly
• Congenital anomalies: Cleft lip or palate, frontal bossing, and hypertelorism
• Skeletal anomalies: Sprengel deformity, marked pectus deformity, and syndactyly
• Radiologic anomalies: Vertebral anomalies, syndactyly etc
• Medulloblastoma
• Seizures
• Mental retardation
• Meningioma
• Ovarian fibroma

(Aloosi et al. 2018, pp. 3)

CLINICAL MANIFESTATIONS

Skeletal deformities: frontal bossing, hypertelorism, wide nasal bridge, and prognathism

(Aloosi et al. 2018, pp. 1)
**CLINICAL MANIFESTATIONS**

Nevoid Basal Cell Carcinoma Syndrome

(Neville, Damm, Allen & Bouquot 2008, pp. 689)

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**CLINICAL MANIFESTATIONS**

Intra-orally, multiple odontogenic keratocysts were clinically diagnosed.

(Neville, Damm, Allen & Bouquot 2008)
INVESTIGATION

OPG showing multi-loculated radiolucent lesions in 3 quadrant with ectopic teeth and root resorption

Axial view CT showing well-defined non-enhancing radiolucent lesions involving left maxilla with associated impacted tooth 18

(Mohan, Verma, Agarwal, & Singh 2013)

INVESTIGATION

PA skull x-ray revealed calcification of the falx cerebri

Chest x-ray revealed a bifid rib

(Aloosi et al. 2018, pp. 2)
HISTOPATHOLOGICAL FINDINGS

This demonstrates the presence of stratified squamous epithelium with para keratinization overlying the connective tissue. (Aloosi et al. 2018, pp. 2)

This odontogenic keratocyst shows numerous odontogenic epithelial cells resting in the cyst wall. (Neville, Damm, Allen & Bouquot 2008, pp. 691)

CASE PRESENTATION

Patient’s History

A 16 year-old fit and healthy male presented with a painful swelling at the left maxilla
Hypertelorism/ Macrocephaly and Wide Nasal Bridge

PIGMENTED LESIONS ON FACE
INTRAORAL EXAMINATION

Open bite
Crowding of teeth
Narrow arches

INVESTIGATION

OPG REVEALING MULTIPLE RADIOLUCENCIES IN THE LEFT MAXILLA, THE ANTERIOR AND LEFT MANDIBLE
Coronal and axial view CT showing well-defined non-enhancing radiolucent lesions involving left mandible and maxilla with associated impacted teeth.

The lateral ceph X-ray shows a prognathism.
PA skull x-ray revealed calcification of the falx cerebri.
Histopathological Report

Clinical Information:
Multiple cysts in anterior and left maxillary, diagnosis in favor of OKC in Gorlin-Goltz syndrome.

Macroscopy:
Large plaque 3.5x3x2 cm, grey firm soft and cystic around each tooth is excised from left maxillary bone.

Histology/Cytology:
The piece shows multiple cystic spaces lined by keratinized or parakeratinized stratified squamous epithelium of variable thickness. The underlying fibrous tissue shows commonly small or large odontogenic cysts, thin keratin material. The respiratory epithelium of maxillary sinus is found unlined by less fibrous tissue. There is no evidence of dysplastic cell.

Conclusion:
The epithelial lining of this cystic lesion is compatible with an odontogenic keratocyst and supports the clinical diagnosis of a Gorlin-Goltz syndrome.

Investigation

Hand X-ray showing long slender fingers without syndactyly
DIAGNOSIS

THE DIAGNOSIS CAN BE MADE BASED ON:

Three major criteria
- Multiple OKCs
- Calcification of falx cerebri
- Suspected BCCs with some pigmented lesions

Three minor criteria
- Macrocephaly
- Congenital anomalies (frontal bossing, moderate hypertelorism)
- Prognathism

DISCUSSION

- Principle of GGS diagnosis should be based on major and minor criteria.

- Radiotherapy should be avoided if possible as it may trigger the development of additional tumors in the adjacent skin areas

- MRI follow-up every 6 months for 7 years to monitor the development of medulloblastoma

- Genetic counseling is appropriate for affected individuals

(Neville, Damm, Allen & Bouquot 2008)
CONCLUSION

• BCC and OKCs have to be treated in Gorlin-Goltz syndrome

• Inter-disciplinary team approach can provide a definitive diagnosis- clinically and histopathologically.

• The BCC can be prevented by early diagnosis of GGS.

• Avoid sunlight to reduce the risk of BCC

REFERENCE


THANK YOU!