

CBCT- A LATEST APPROACH TO DIAGNOSE IMPACTED CANINE A CASE REPORT

Ashok Panika*, Bhardwaj A**, Makhija P G***, Thukral R ****

Abstract:

Correction of maxillary impacted canines often required surgical intervention. A reliable method to diagnose the position of impacted canine is always desirable. In this case report along with other diagnostic tools CBCT technique was used to detect the actual position of impacted maxillary canine.

Key Words: Impacted canine, CBCT, Diagnostic tools

INTRODUCTION:

The ectopic eruption and impaction of teeth are frequently encountered clinical problems. Impacted teeth may lead to arch length discrepancy and treating such cases puts the clinician into great dilemma whether to extract or not to extract.

Early diagnosis of impacted teeth in relation to surrounding structure is based primarily on radiographic examination. Various conventional radiographic evaluation includes Periapical films, Occlusal films, Panoramic radiographs. But all these aids have a common limitations of providing information only in two dimensions of three dimensional structures.

*PG student, **Professor & Guide,
*** Professor & HOD, ****Professor
Department of Orthodontics, Modern
Dental College & Research Centre, Indore

Cone Beam Computed Tomography(CBCT) is suggested in cases where conventional radiographs do not give an in depth analysis and actual relationship with the surrounding structures.¹

Since its introduction CBCT technique has gained widespread use in various fields of dentistry. It has many advantages such as:

- a) Low radiation dose compared to CT
- b) High degree of image reproducibility
- c) Provides information in all three planes¹

In this case report CBCT was used as a valid diagnostic method to assess the accurate position of maxillary impacted canine.

CASE REPORT:

A 20 year old female patient reported to the department with the chief complaint of forwardly placed upper front teeth and spacing between them. Intra-oral clinical examination showed permanent dentition in both arches with proclined upper anteriors, spacing between them, increased overjet and clinically missing upper left maxillary canine. (See Fig 1,2)



Fig- 1&2 Clinical examination showing missing left maxillary canine with proclined incisors and increased overjet.

Initial OPG and Occlusal radiographs showed palatally impacted upper left maxillary canine. But the actual position and angulation of tooth was not revealed. (See Fig 3,4). CBCT was performed to locate actual position of root and crown, along with the angulation. (See Fig 5,6)

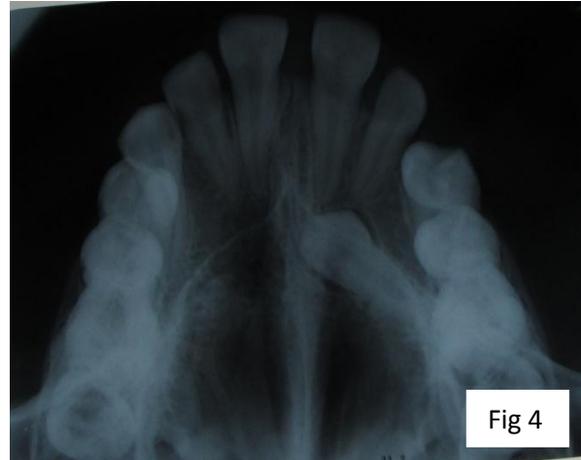


Fig 3 & 4. Initial OPG and Occlusal radiograph showing palatally impacted left maxillary canine

CBCT revealed that upper left maxillary canine is palatally placed, mesially tilted and obliquely impacted. Crown was placed near and above the root tip of left central and lateral incisors. Root apex was seen in alveolar bone of maxilla covered by anterior wall of maxillary sinus and lateral wall of nasal fossa.

3D examination suggested that the impacted left maxillary canine was highly unfavourable requiring extraction (See Fig 7,8)

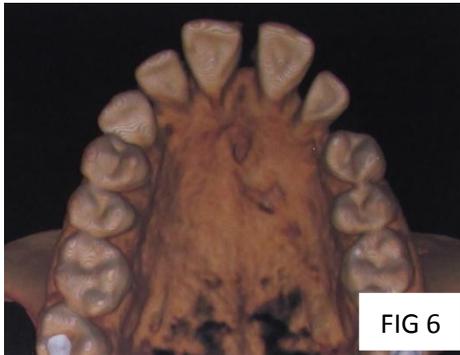


Fig 5,6,7& 8 . CBCT showing palatally placed ,mesially tilted left maxillary canine and in between the roots of left central and lateral

TREATMENT PLAN:

1. Surgical removal of impacted canine as it was highly unfavorable.
2. Extraction of 14,35,44
3. Conversion of 24 into 23

TREATMENT OBJECTIVES:

1. Retraction of upper anteriors.
2. Closure of spaces.
3. Establishing Class I molar and canine relation
4. Improve facial esthetics

TREATMENT PROGRESS:

Impacted left maxillary canine was surgically extracted. Treatment with fixed mechanotherapy using MBT .022 appliance was initiated. Levelling, aligning and closure of spaces was carried out.

DISCUSSION:

Successful treatment of impacted tooth is dependent on careful evaluation of case, localization of its position and angulation in relation to surrounding structures.² Conventional radiographs (periapical films, occlusal films, panoramic radiographs) provides information only in two dimensions.

The proper localization of impacted tooth plays a crucial role in determining feasibility, access and proper direction of application of orthodontic forces.

As CBCT has overcome the shortcomings of conventional radiographs, it is considered as the most advanced diagnostic tool for diagnosis of impacted canine.

In this case report CBCT has been used to locate the accurate position of the impacted canine.

Corresponding Author :

Dr. Ashok Panika
P.G Student
Dept. of Orthodontics & Dentofacial
Orthopaedics
Modern dental college & research
centre ,Indore.

CONCLUSION:

The prognosis of impacted canines depends upon proper diagnosis related to its actual position in relation to surrounding structures.

CBCT can provide more valid and accurate information about impacted canines than conventional radiographic methods.

REFERENCES:

1. Dimmitros , Henrik Lund et al: Root resorption diagnosed with cone beam computed tomography after 6 months of orthodontic treatment with fixed appliance and relation to risk factors. Angle Orthodontic. 2012;82:196-201.
2. Anand K, Nigel M. Early prediction of maxillary canine impaction from panoramic radiographs: American journal of orthodontics and dentofacial orthopaedics 2012;142:45-51