

Original Research

Prevalence of talon cusps in Jodhpur population visiting a dental college – A clinicoradiographic evaluation

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ABSTRACT:

Aim and Objectives- The study was done to observe the prevalence of Talon cusp in Jodhpur population. It was based on both clinical & radiological evaluation. Prevalence of talon cusps was observed considering specific tooth, age, gender, number, site and the complications associated with them. **Material and Methods-** A total of 6400 patients who visited OPD of private dental college of Jodhpur city (Rajasthan) for a period from April 2013 to March 2014 were included in the study. All the patients were thoroughly examined clinically. Radiographic examinations were carried out for all the patients with Talon cusps. Photographs of all the cases were taken with their respective radiographs. Exclusion Criteria included Patients with systemic diseases & syndromes and deciduous teeth. **Result-** Out of 6400 patients, 835 patients had different types of anomalies. Out of 835 patients with anomalies 10 patients had talon cusps with the prevalence of 1.19%. 15 teeth were found to have Talons cusp out of total 1579 teeth with different anomalies giving the teeth prevalence of 0.94%. Maxillary prevalence was more than the mandibular prevalence. Maxillary lateral incisor was the most prevalent tooth associated with talon cusp. **Conclusion-** Although all the cases in this study were found without any complaint, But Talon cusps may cause occlusal interference, caries, attrition, pulpal necrosis and many other problems, So Proper observation and diagnosis may help ruling out the cause and thus treatment can be done accordingly.

Keywords: Talon cusp, supernumerary tooth, developmental dental anomalies

Received: 10 May, 2021

Accepted: 17 June, 2021

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This article may be cited as: Nayak A, Singhal P. Prevalence of talon cusps in Jodhpur population visiting a dental college – A clinicoradiographic evaluation. J Adv Med Dent Sci Res 2021;9(6):184-188.

INTRODUCTION

The talon cusp is a relatively rare developmental anomaly characterized by the presence of an accessory cusp like structure projecting from the cingulum area or cemento-enamel junction of the maxillary or mandibular anterior teeth in both the primary and permanent dentition. The presence of this extra cusp from the occlusal surface of posterior teeth is called dens evaginatus. The prevalence of talon cusp ranges from 0.06% to 7.7%.¹ It was first described by Mitchell as an accessory cusp in 1892 and in 1970 it was termed as Talon cusp by Mellor JK et al.² The most commonly affected teeth are maxillary incisors and occur more in males than females in both primary and permanent dentitions. Talon cusps are most frequently found on the palatal or lingual faces of the teeth; rarely on labial surfaces of teeth. Talon cusp may be associated with a number

of syndromes including Mohr syndrome, Sturge-Weber syndrome, Rubinstein-Taybi syndrome, incontinentia pigmenti achromians, and Ellis -van Creveld syndrome. Other names-Dens evaginatus of anterior teeth, interstitial cusp, tuberculated premolar, odontoma of the axial core type, evaginated odontoma, occlusal enamel pearl, occlusal anomalous tubercle, and supernumerary cusp.

Talon cusps were classified by Hattab et al into three types on the basis of the degree of cusp³ formation and extension.

1. TALON

A morphologically well-delineated additional cusp that prominently projects from the palatal surface of a primary or permanent anterior tooth and extends at least half the distance from the CEJ to the incisal edge.

2. SEMI TALON

An additional cusp of 1 mm or more, but extending less than half the distance from the CEJ to the incisal edge. It may blend with the palatal surface or stand away from the rest of the crown.

3. TRACE TALON

An enlarged or prominent cingula in any of its variants (i.e. conical, bifid or tubercle-like) originating from the cervical third of the root.

Radiographically, it may appear typically as a v-shaped radiopaque structure, originating from the cervical third of the root. The radiopaque v-shaped structure is superimposed over the normal image of the crown of the tooth. The point of the 'V' is inverted in mandibular cases. This appearance varies with the shape and size of the cusp and the angle at which the radiograph is taken

Talon cusp may cause a variety of clinical problems such as occlusal interference, irritation of tongue and neighbouring oral tissues, pulpal necrosis, caries, attrition, periodontal problems, displacement of the affected tooth, breast feeding difficulties, esthetic problems, accidental cusp fracture, radio-diagnostic issues and even temporo-mandibular disorders.

Talon cusp is not an indication for dental treatment unless it causes clinical problems. Other treatment includes sequential grinding, pit and fissure sealing, pulp therapy, restorative treatment, full crown coverage, and extraction of the affected tooth.

MATERIAL AND METHODS

A total of 6400 patients who visited OPD of private dental college of Jodhpur city (Rajasthan) for a period from April 2013 to March 2014 were included in the study for the prevalence of talon cusp. The study was approved by institutional ethical committee. Written consent was taken from all the patients. All the patients were thoroughly examined clinically under artificial illumination using mouth mirror & probe wearing sterile hand gloves & mouth mask & radiographs were taken if talon cusp was found. All the talon cusps found were observed considering gender, number, site and the complications associated with them. Radiographic examinations were carried out for all the patients with talon cusp. Photographs of all the cases were taken with their respective radiographs. Exclusion Criteria included deciduous teeth and the Patients with systemic diseases & syndromes.



Fig 1-Unilateral Talon cusp in maxilla and mandible

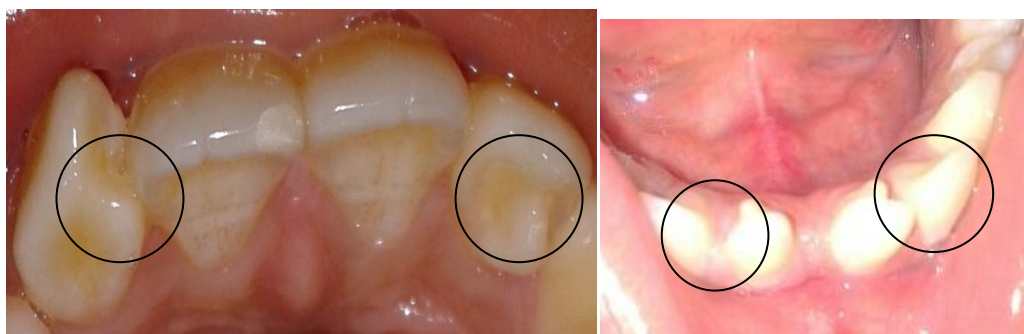


Fig 2-Bilateral Talon cusps in maxilla and mandible

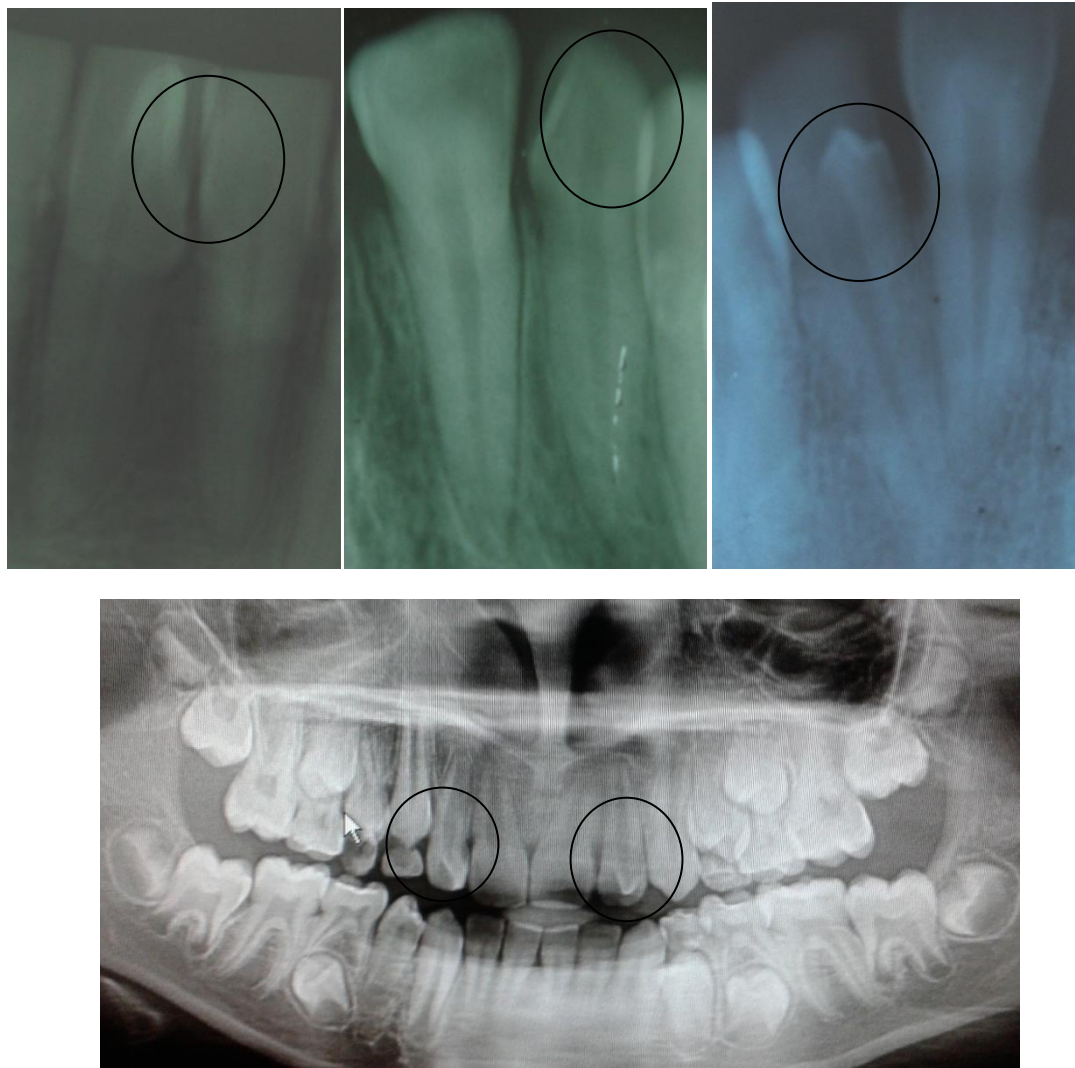


Fig 3-Radiographic appearances of Talon cusps

RESULT

Total 10 patients were found to have talon cusp, Out of those 6 were male and 4 were female. 4 patients were in the group of 10-25 years, 5 patients were in the group of 26-40 years and 1 patient in the group of 41-55 years, (Table 1). Out of 835 patients with anomalies 10 patients had talon cusps with the prevalence of 1.19%. 15 teeth were found to have Talons cusp out of total 1579 teeth with different anomalies giving the teeth prevalence of 0.94%. Out of 15 teeth, 10 were maxillary lateral incisors, 4 were mandibular central and 1 was maxillary central with the prevalence of 66.7% 26.7% and 6.7% respectively, (Table 2). 8 were present on the left side while 7 on the right side. Bilateral and maxillary involvement was more prevalent than the unilateral and mandibular involvement.

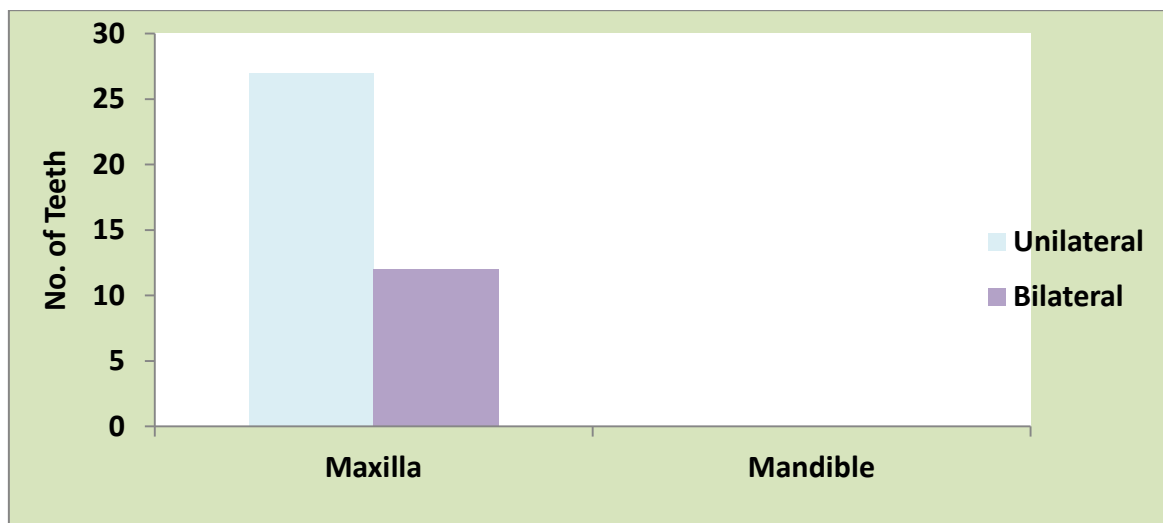
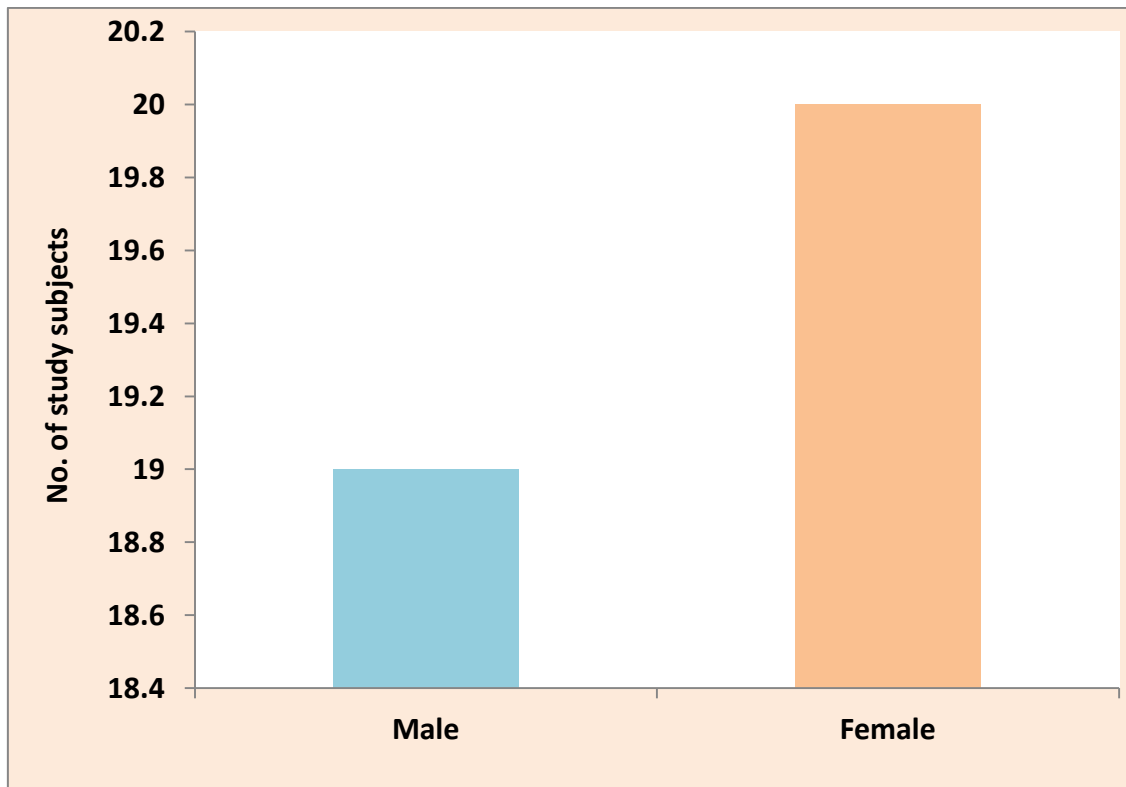
Table 1: Distribution of study subjects according to age and gender having Talon cusps

Age	No. of study subjects (n)	Percentage (%)
10-25 years	4	40 %
26-40 years	5	60 %
41-55 Years	1	10 %
56 Years and above	0	0 %
Gender	No. of study subjects (n)	Percentage (%)
Male	6	60 %
Female	4	40 %

Table 2: Distribution of teeth according to their site and side having Talon cusps

Quadrant	Tooth		No. Of study subjects (n)	Percentage (%)
Maxilla	Central Incisor		1	6.7 %
	Lateral Incisor		10	66.7 %
Mandible	Central Incisor		4	26.7 %
Side	Right		7	46.7 %
	Left		8	40 %
Site	Unilateral	Maxilla	3	30 %
		Mandible	2	20 %
	Bilateral	Maxilla	4	40 %
		Mandible	1	10 %

Distribution of study subjects according prevalence of Talon cusps



DISCUSSION

Talon cusp is a relatively rare developmental anomaly with the prevalence from less than 1% to 8%. In this study **Talon cusps** were found with the prevalence of .94%. Kruthika *et al* and Oliver *et al*^{5,6} found the prevalence of 4.28% and 4.8% respectively while Saurabh *et al* and Berna *et al*^{7,8} found the prevalence of .97% and .12% respectively. Male prevalence (males 60%, females 40%) was more in this study which is similar to the studies of Saurabh *et al*, Berna *et al* and Oliver *et al*^{7,8,6} while it was more in females in the study of Kruthika *et al*⁵. In the previous studies Maxillary lateral incisors are the most commonly affected teeth followed by maxillary central incisors and canines. In this study Maxillary lateral incisors (66.7%) were found to be the most commonly affected teeth followed by mandibular central incisors (26.7%) and maxillary central incisors (6.7%). Maxillary canine it was found to be zero.

CONCLUSION

Talon cusp is a rare anomaly which often doesn't need any treatment but if present may cause problems like caries, occlusal interference, irritation of surrounding oral tissues, periodontal problems, displacement of the affected tooth, breast feeding difficulties, esthetic problems, , radio-diagnostic issues and even temporomandibular disorders. So correct diagnosis and knowledge about talon cusp may be helpful in finding out the cause for the problems associated with it and thus proper management can be done preventing the

patient to face the difficulties. Also, its association with syndromes may help ruling out patient with syndromes.

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