ASSESSMENT OF BITE FORCES IN TEMPOROMANDIBULAR JOINT ANKYLOSIS PATIENTS – A RETROPROSPECTIVE STUDY

by

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ABSTRACT

PURPOSE:

The reason for undertaking this study is to ascertain restoration of masticatory function after treatment of ankylosis of the temporomandibular joint. Maximum biting force is an important parameter of masticatory function that is relatively easy to measure. Thus in this study bite force measurements will be used to evaluate changes in, and duration of restoration of masticatory function in patients treated for temporomandibular joint ankylosis

METHODS

A total of 30 patients, who were/will be treated for temporomandibular joint ankylosis in the Craniofacial Surgery & Research Centre, Department of Oral & Maxillofacial Surgery, S. D. M College of Dental Sciences and Hospital, Dharwad, from 1st December 2007 to 1st July 2009.A control group of 30 age and sex matched individuals will be included in this study.

The criteria for selection of TMJ ankylosis patients are

Unilateral ← Ankylosis → Fibrous

Bilateral ← Ankylosis → Bony
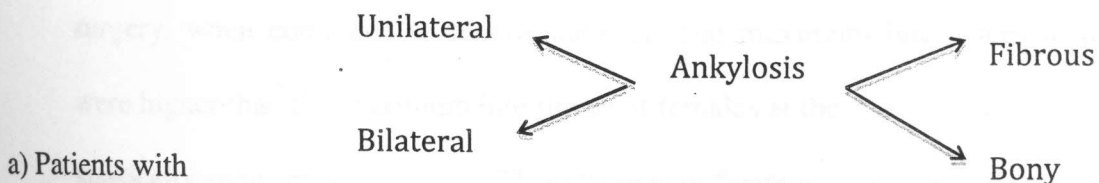
a) Patients with

b) Patients with adequate dentition and minimum interincisal mouth opening of 10mm to perform bite force measurements.

(2). The control group includes healthy age and sex matched individuals.

(3) Bite force analysis of the patients will be done at the right and left posterior teeth regions using a bite force transducer.

(4). Bite force of healthy individuals will also be done by the same method.

(5) Patients will be examined pre and post operatively on 7th day, after 4 weeks and 12 weeks.

(6). Statistical analysis will be done using Paired and unpaired Student-t test

RESULTS :

Of all the 30 patients analysed in this study, none were able to recover their normal bite force levels even 3 months after corrective temporomandibular joint surgery. Both male and female patients showed lower biting forces when compared to controls, but male patients had closer bite force levels to their controls, after surgery, when compared to female patients. The maximum bite forces in males were higher than the maximum bite forces of females at the end of 3 months with a stastically significant difference. There were significant improvements from 1 week to 1 month bite force and 1 month to 3 months maximum bite force in both males and females.

The patients who were less than 15 years of age didn't have any significant difference in bite forces when compared with their controls at the end of 3 months in contrast to patients more than 15 years of age who had significantly low bite forces as compared to their control group. There wasn't any significant difference between the maximum bite forces in bony or fibrous ankylosed patients. There werent any significant difference in bite forces between various treatment options like ipsilateral or contralateral coronidectomy in association with gap arthroplasty.

CONCLUSION:

The male patients had higher bite forces when compared to the female patients. The patients who were less than 15 years of age didn't have any significant difference in bite forces when compared with their controls at the end of 3 months in contrast to patients more than 15 years of age who had significantly lower bite forces as compared to their control group. There was a significant difference in the bite forces of the affected and unaffected side in unilateral TMJ anklyosed patients. The unaffected side had more bite force than the affected side. There were no significant differences in the bite forces of bony or fibrous type of ankylosis, or in patients who had ipsilateral or contralateral coronoidectomy in association with gap arthroplasty.