

Possible Modifications for Removable Prosthodontics in Bell's Palsy Patients: Systematic Review

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Abstract

Objectives: Oral rehabilitation of bell's palsy patients have a great prosthodontic concern. This study aims to systematically review the challenge to determine the more effective prosthodontic modifications, improving esthetics and function.

Methods: The MEDLINE, ScienceDirect, ScholarGoogle and ResearchGate electronic databases were searched with included peer-reviewed publications in English language, clinical studies reporting on Management of bell's palsy patient with oral prosthesis from 2006 to 2016. The search strategies was carried out depending on the choice of related studies. The presuggested inclusion and exclusion criteria determined the related studies included in the research. The scanned articles typically discuss the modifications of prosthodontics and its management in bell's palsy patients. Finally, thirteen studies were selected for analysis.

Results: There were significant modifications and new fabrications in prosthodontics as a treatment of a patient's chief complain in bell's palsy. All the modification in denture might be

intraoral or extraoral that depends on the case and chief complain. Modification of denture buccal flange by increasing the thickness and make the cusps more flat to improve the lost masticatory, esthetic and phonetics which are the key points in achieving patients satisfaction.

conclusions: The inclusion of neutral zone principle being achieved in impression procedures to obtain durable denture. Patients need to follow up with denture weekly at least for six months.

Background

Bell's palsy is the paralysis or acute abrupt in onset shortcoming of the nerve that controls the facial muscles in favor of the face seventh cranial nerve. Patients all of a sudden can't control their facial muscles, more often than not on one side (1-6). Bell's palsy predominates with an extent of approximately 20–60 per 100,000 per year (7-10). The facial nerves control flickering, grinning, salivation, opening and shutting of the eyes, lacrimation, and scowling. At the point when the facial muscle breakdowns, the accompanying indications may endure side effects (1). Numerous etiologies prompting facial loss of motion might be immune system issue, ischemic

put-down, acquired(11, 12), birth injury, formative or diseases, for example, herpes zoster, idiopathic, neoplasm influencing the facial nerve and injury (13). Further diagnostic tests can be applied for removing other etiologies of facial paralysis(14). The analysis is affirmed by tests used to evaluate the elements of facial nerve like the flicker test, schirmer test, and testing of taste in the foremost 66% of tongue (15).The normal clinical elements of facial loss of motion are loss of wrinkles of forehead(16-18), hanging of the side of the mouth, trouble in discourse and eating (15).Also, inability to raise the smile (16-19). They may further to include decreased salivation, hyperacusis and dryness of eye (2, 16) ,Administration of edentulous patients enduring neuromuscular issue such cerebral ataxia, one-sided or reciprocal facial loss of motion is testing work for a dental practitioner(20)the dental prosthesis plays an important role in facial palsy patient to be very well (21). Rehabilitation of such compromised conditions includes both technical and artistic skills as the patient is comprised of both esthetics and function. Although there were well-formed ridges dental Implant prosthesis would have been a better selection, but because of depressed of the cheek on the impacted side the lastingness of dental embed will be addressed. Denture bolstered in embed reestablish work superior to removable machines, and denture horizontal outskirt will bolster tissue of incapacitated people.(22, 23)But dental implants are not supporting well-formed esthetic

and contour the face of bell's palsy patient such modified removable partial denture. Prosthodontics require modification of traditional techniques of denture construction in patients with facial loss of motion, such a commitment is negligible. Furthermore, remuneration of facial symmetry puts extra requests on the Prosthodontics require modification of traditional techniques of denture construction (20).That would enhance the appearance with changes of the dentures such cushioning for the buccal flanges, acrylic flange expansions(24, 25).enhancing removable prostheses is a plane that may improve esthetics and function(23). In this study, we aim to determine the possible modifications in prosthodontics that would be more effective in bell's palsy patients rehabilitation.

Methods

An audit convention was organized on the premise of the rules proposed by the PRISMA articulation (30, 31) and the Cochrane Collaboration (32) the survey address, targets of the review, qualification criteria, inquiry and information investigation procedure were unmistakably expressed ahead of time and joined in the convention's substance. The qualification criteria, deciding the incorporation and prohibition criteria of the deliberate surveyinvolve the following subject:

Samples

Medically diagnosed and treated patients with Bell's palsy, need denture to (complete or partial) restore masticatory, esthetic and functions.

Comparison

Different prosthodontics treatment options to edentulous patients with Bell's palsy

Instruments

Objective methods (e.g. silicone rubber impression material, split dentures).

Outcomes

Adaptation, stability, insertion accessibility and retention of dentures

Types of studies

Randomized controlled clinical trial (RCT), Case reports, master supposition papers ought to be rejected because of their high danger of inclination (31) In vitro and non-human reviews, writing, and orderly surveys, and clinical reviews that allude to subjective techniques for biting capacity assessment, esthetic appearance ought to likewise not be incorporated.

Dialect: Publications in English.

Distribution status: Only full-content papers in companion audited diaries

Search strategy

The writing inquiry was directed by two people utilizing diverse electronic databases MEDLINE, ScienceDirect, and ResearchGate and unpublished data in English-language, clinical studies reporting on differences prosthetic rehabilitation of bells palsy patients. The search terms were used, alone or in

combination were "prosthetic rehabilitation", "bells palsy patients", "facial nerve paralysis" complete dentures". The study covered a period from January 1996 to October 2016. The suggestion of "related articles" was also used. Review articles, and references from different studies, were also used to identify close articles.

Study selection:

The review procedure consisted of two stages: During the first stage, the titles, abstracts, and/or full texts were reviewed by the two authors together. Initially, titles were scanned for relevance, and the abstracts of the related articles were observed. The articles obtained were screened using the following exclusion and inclusion criteria the selected full texts were further screened independently by the two reviewers in the second phase of review using the following inclusion criteria:

1. Studies conducted on the prosthetic management of bell's palsy.
2. Studies included oral rehabilitation of facial nerve paralysis
3. Studies published in English.
4. Studies involved different types of bell's palsy (bilateral, unilateral)

Exclusion criteria

- 1- Non- human study.
- 2- Studies used implant supported dentures.

3- Studies not published in English.

Information extraction

Information in regards to study plan, the quantity of members, term clinical finding were extricated from each included review. This story blend gave an underlying enlightening synopsis and clarification of the qualities and discoveries of the included reviews (33).

Results

Search strategy followed

Figure 1 shows the stream graph of the inquiry procedure followed keeping in mind the end goal to distinguish the at last included reviews from an aggregate of 219 distributed titles. An eighty-nine records were copied were rejected. At first, titles were screened for importance, and the modified works of the pertinent articles were acquired one hundred thirty reviews. The screening of titles and edited compositions brought about an extra consideration/prohibition criteria were forty-nine reviews. Subsequently, fourteen articles were incorporated for full-content evaluation then were excluded one article with reasons (Table 4). Finally, thirteen studies were selected for analysis.

Examination of the characteristics of the included studies

The characteristics and the main results of the 14 selected articles Current study concerned with different

methods of prosthetic management of patient with bell's palsy summarized in the following tables 1,2and 3.

Discussion

Through this systematic review, we demonstrate the clinical technique of complete denture construction that requires modifications when patients suffer from facial paralysis, bell's palsy etc.(15, 26) that is a difficult task for a prosthodontist. The selected articles showed various bell's palsy patient such as permanent, temporary, unilateral and bilateral from different old age. Drugs were described to deal possible neural lesions, physical treatment was started early and at home(27-31).Medications and Precautions used to keep eyes in better condition when Lagophthalmos with ocular exposure or eye loss competency. Modifying removable prostheses is a plan that may enhance esthetics and function(23).Prosthodontists treat the patientsaccording to treating the chief complaints to modify the extraoral or intraoral denture. In general, in modified extraoral the wire loop is located into removable prosthodontics. Prosthodontists followed up the patient to observe the diagnosis and improvement of the treatment. In this study, we concern to determine the best type of manifestations and modifications in dental prostheses as a treatment of a patient's chief complaint in bell's palsy. several studies (20, 21, 32-34) fabricated removable prosthesis by conventional technique and additional thickness of denture borders

specially in buccal and labial flanges to provide support for affected side to improve speech and esthetics. Even drooling of saliva was reduced for patients suffering from the side of the facial paralysis. Two studies (35, 36) designed a complete immediate denture for the maxillary arch with modification in the buccal flange of upper denture, also Simrat Kaur et al (36) modified and added the surface of the clear acrylic resin occlusal surface is made as flat as possible. Padilla-Guevara Mariela et al (37) used acrylic shield to improve symmetry of the face, as well as to show the nasolabial fold. Sharmila Hussain et al (38) starts with modified the existing denture to increase psychological state of patient that was by processing of autopolymerizing acrylic resin, then fabrication of new hollow denture with modified in the buccal flanges. Doddamani et al (39) demonstrated fabricating detachable cheek plumper to support flaccid musculature. Sajjan, Bagchi and Somani (40-42) modified in maxillary denture using extraoral extension that attached the denture to retract the lip to restore facial asymmetry. Specially with patient suffering in bell's palsy for long period. Sajjan et al (40) patient chief complaints were different than other case that was hanging lower lip, improper speech, gingivitis in the mandibular anterior region and characterized as bilateral bell's palsy. Managed by rehabilitated the patient by giving him a lip-supporting prosthesis.

Conclusions

We summarize that, treat the patient depending on his/her chief complaint by using modifications and add acrylic in the removable prosthodontics in buccal side and make the cusps more flat to improve the esthetic and functions. Follow up the patient at least for three to six months. We can modify the prosthesis extraorally if required. About any effective in eye we consult Ophthalmologist.

Recommendations

Further researches and investigation are required for better prosthetic management of bell's palsy patient also, further modification for dentures required for restoring function, esthetics and speech for patient with bell's palsy.

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