

Rehabilitation of Complex Edentulous Cases with Acrylic Dentures: A Literature Review

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Abstract

The treatment of total edentulousness is based on the knowledge of the morphological elements of the prosthetic field, their biological structure and their quality. The fully edentulous prosthetic field comprises all the anatomical elements that are in contact with the complete denture and contribute to its maintain, support and stability. A systematic review was conducted based on articles from the literature. These were obtained using the PubMed and PubMed Central electronic databases. Data collection for the systematic review was based on the PRISMA (Preferred Reporting Items) criteria for Systematic Reviews and Meta-Analyzes. From the total number of 26 articles included in the systematic review, 73% refer to the treatment with acrylic prosthesis for patients with various malignancies. A percentage of 12% approach the prosthetic treatment for patients with ectodermal dysplasia. These patients suffer from anodontics or oligodontics. Five percent presented severe prosthetic field atrophy, 3% had cleft lip and palate and 3% presented general pathologies that indicate prosthetic rehabilitation with complete/ partial acrylic denture. Prosthetic treatment with acrylic prostheses was possible, no matter how were the conditions of the prosthetic field or the general pathology of the patient. The majority of patients treated with acrylic prostheses have undergone jaw surgery. Prosthetic treatment with obturator prosthesis is suitable for these cases

Keywords: acrylic dentures; students; severe bone atrophy; bone defects.

1. Introduction

The treatment of total edentulousness is based on the knowledge of the morphological elements of the prosthetic field, their biological structure and their quality.

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The fully edentulous prosthetic field comprises all the anatomical elements that are in contact with the complete denture and contribute to its maintain, support and stability. There are many systemic or local pathological conditions that can negatively affect the appearance of the craniofacial and the anatomy of the fully edentulous prosthetic field. Whether it is genetic syndromes, acquired systemic pathologies or surgeries, they can make prosthetic treatment difficult [1,2,3]. Resective surgery involves closing the nasal or oro-sinus communications in order to resume the functions of the dento-maxillary apparatus and the aesthetic restoration of the facial appearance [4,5]. Fractures of the skull bones are often treated by reduction and immobilization, but there are patients in whom the bone defect affects a larger area, requiring multidisciplinary treatment [6]. Treatment options include acrylic prosthesis, which can replace both traumatic teeth and facial/intra-oral support tissues.

The aim of the present study was to identify clinical situations that have successfully been treated with acrylic denture (partial or total) and present a deficient prosthetic field with severe bone atrophy (negative alveolar ridge), bone defects of multiple causes (congenital, post-surgical, post-traumatic), as well as certain general conditions that impede bone augmentation and / or dental implant surgery.

2. Materials and method

Search strategy

A systematic review was conducted based on articles from the literature. These were obtained using the PubMed and PubMed Central electronic databases. Data collection for the systematic review was based on the PRISMA (Preferred Reporting Items) criteria for Systematic Reviews and Meta-Analyzes.

Selection criteria

Criteria for including articles in the systematic review:

- The date of publication of the articles was between 2011-2021;
- The articles could be read in full;
- The articles were written in English;
- Articles presenting cases related to the treatment with acrylic dentures.

Article exclusion criteria:

- Articles available only in abstract;
- The title of the articles did not correspond to the subject;
- Articles that could not be read in full;

- The topic of the study could not be included in the requirements of the review;
- Restrictions on the language used.

Search results

Certain keywords were used to select the studies included in the systematic review, such as: "acrylic denture", "alveolar bone loss", "bone resection", "maxillectomy", "cleft palate", "ectodermal dysplasia", "maxillofacial defects", "trauma".

The PubMed database search was performed by associating the keywords listed above. The results were obtained only for the combinations keywords "acrylic denture" AND "maxillofacial defects" and "acrylic denture" AND "trauma".

Thirty-four articles were identified by searching for "acrylic denture" AND "maxillofacial defects". The use of inclusion criteria such as the language (English) and the year of their publication (2011-2021) resulted in 2 articles. After deleting the duplicate articles, 1 article was introduced in the review.

The combination of the keywords "acrylic denture" AND "trauma" resulted in 107 articles. After selecting the inclusion criteria, 4 articles were obtained. Following the exclusion criteria 2 articles were obtained and introduced in the systematic review.

Obtaining articles from the PubMed Central electronic database was based on the use of the keywords listed above.

For the combination of the words "acrylic denture" AND "alveolar bone loss", after selecting the year of publication and the articles with access to the full text, 352 articles were obtained. The combination of the words "acrylic denture" AND "alveolar bone loss" NOT "implants" led to a reduction in the number of results, offering 55 articles with potential eligibility. The combination of the words "acrylic denture" AND "bone resection" generated 97 results. In order to eliminate the articles that included implant treatment, the combination of the words "acrylic denture" AND "bone resection" NOT "implants" was used and we obtained 22 articles. Filtering the articles after the year of publication and articles with full access, for the combination of the words "acrylic denture" AND "cleft palate" 57 articles resulted. The search after the association of the keywords "acrylic denture" AND "ectodermal dysplasia" generated 33 results. For the combinations of words "acrylic denture" AND "maxillofacial defects" NOT "implants" 67 results were obtained, and for "acrylic denture" AND "maxillectomy" NOT "implants", 26 results. We excluded articles that were inconsistent with the topic of the study, duplicate articles, articles whose topic could not be included in the review requirements, and those that did not present acrylic denture as a treatment option.

At the end of the search in the two electronic databases we found 26 articles that were included in the systematic review, 23 belonging to the PubMed Central database and 3 belonging to the PubMed database.

3. Results

Article selection procedure

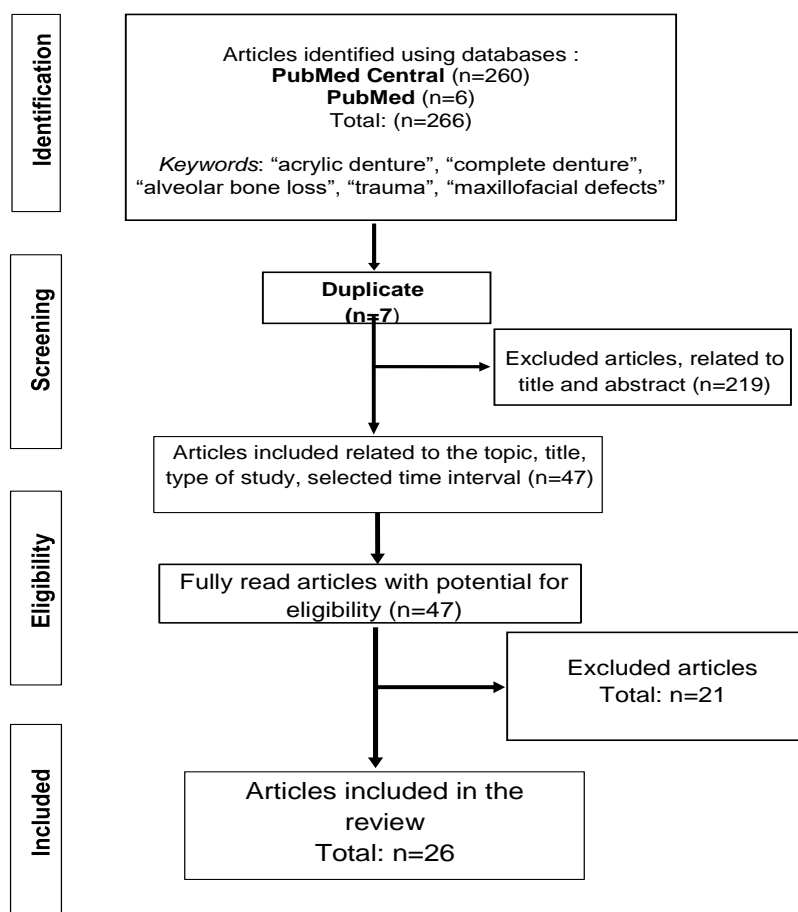


Figure 1: Graphical representation of the item selection algorithm.

The following table contains the year of publication of the studied articles, the authors, the prosthetic treatment applied to the patients, the local and general particularities of the case and the conclusions of the study (Table 1).

Table 1: Articles included in the review [7-32].

Nr. Crt.	Publication Year	Authors	Aplied treatment	Particularities of the case (locals and generals)	Conclusions
1	2012	Veeramalai Devaki, Paramasivam Manonmani, Kandasamy Balu, Ramraj Jayabalan	<i>Mandibular acrylic complete denture</i>	<ul style="list-style-type: none"> - Total mandibular edentation; - Severe atrophy of the fully edentulous prosthetic field; - Low amount of fixed gum. 	<p>The increased resorption of the edentulous mandibular ridge makes it difficult to treat with an acrylic prosthesis.</p> <p>It is necessary to obtain the stability of the prosthesis at the level of the prosthetic</p>

		Aravind.			field and to extend its edges within the physiological limits of the fully edentulous prosthetic field.
2	2015	Manu Rathee, Neha Sikka, Ashutosh Kaushik	Mandibular Acrylic Partial Prosthesis (Andrews System)	Partial mandibular edentation; - Severe atrophy at the level of the edentulous breach (Siebert class III); - History of parasymphatic mandibular fracture; - Unsupported lower lip at the level of the edentulous gap, with an unsightly appearance.	The Andrews system includes two components: the fixed component, cemented at the limiting teeth of the gap and the acrylic mobilizable component. This method is a fast, effective and less expensive treatment option, giving good results, both aesthetically and functionally.
3	2017	Prathibha Saravanakumar, Saravanan Thirumalai Thangarajan, Umamaheswari Mani, Anand Kumar	Total acrylic prosthesis	- Total bimaxillary edentation; - Atrophy of the mandibular prosthetic field; - Instability of the mandibular prosthesis; - Diabetes; - High blood pressure; - Difficulties in performing mandibular movements.	Total prosthesis treatment should lead to satisfactory aesthetic and functional results. The total prosthesis must withstand the masticatory and muscular forces applied to it, in order to guarantee the success of the treatment.
4	2018	Nicola Holland, Gerald McKenna	<i>Total acrylic prosthesis</i>	Total maxillary and mandibular edentation; - History of periodontal disease; - Inadequate adaptation of existing prostheses; - Skeletal relations class III Angle; - Mandibular asymmetry.	The accentuated mandibular asymmetry can be masked by making and correctly applying the total prostheses. Before starting prosthetic treatment, it is necessary to find out the cause of the asymmetry
5	2020	Niko Falatehan, Gracia Anfelia.	<i>Maxillary acrylic total prosthesis</i>	Torus Palatine: - In the posterior third of the hard palate; - At the junction between the hard palate and the palatine veil (line Ah); - Dimensions: 12 mm long, 5 mm wide.	In practice, there are frequent cases of total edentulousness with the presence of a palatine torus that can make it difficult to make a total prosthesis. Following the anamnesis and the examination of the patient, a total acrylic maxillary prosthesis was made, distally cut. This design provides retention and stability without interfering with the palatine torus.
6	2012	Benito Rilo, Noelia	<i>Acrylic partial denture (for</i>	- Velopharyngeal incompetence; - Hypernasality; - Presence of dental units	It is important to obtain patient compliance for the application of this type of prosthesis. Precise fitting of the

		Ferna´ndez-Formoso, Luis da Silva, Joaˆo Carlos Pinho.	<i>velopharyngeal support)</i>	at the level of the maxillary arch.	prosthesis is mandatory to ensure normal swallowing and phonation.
7	2011	Shobha J. Rodrigues, Sharon Saldanha .	<i>Maxillary obturator prosthesis</i>	<ul style="list-style-type: none"> - Maxillary malignant melanoma; - Right maxillary hemirection; - Radiation therapy (contraindicates immediate surgical reconstruction). 	Malignant melanoma of the oral cavity is a rare condition The advantages of the shutter prosthesis are ease of manufacture, infiltration control, short manufacturing time and satisfactory aesthetic results.
8	2012	Pravesh Kumar, Veena Jain, Alok Thakar .	<i>Maxillary obturator prosthesis</i>	10 patients who underwent maxillary resection surgery due to malignant oral pathologies	Obturator prostheses improve phonation, close to preoperative status and reduce hypernasality
9	2015	Pavankumar R. Koralakunte, Sunitha N. Shamnur, Shadakshari Shivmurthy normalã	<i>Acrylic partial denture</i>	<ul style="list-style-type: none"> - Partial left unilateral maxillary edentation; - History of squamous cell carcinoma; - Left hemisection of the mandible; - Facial asymmetry 	. For the treatment of these patients a multidisciplinary team is needed, in this particular case an acrylic prosthesis with an inclined plane is made to guide the mandible to a position.
10	2016	Aditi Garg	<i>Total acrylic prosthesis</i>	<ul style="list-style-type: none"> - Squamous cell carcinoma; - My left hemiglosectum; - Total maxillary and mandibular edentation; 	Careful examination of the functions of the dento-maxillary apparatus is required in these patients. The success of therapy is influenced by the expansion
11	2016	Prema Sukumaran, Michael Fenlon. R.	<i>Maxillary obturator prosthesis</i>	<ul style="list-style-type: none"> - History of squamous cell carcinoma; - Premaxilla resection 	Satisfactory results can be obtained, both aesthetically and functionally, by applying two-part obturator prostheses
12	2016	Raghavendra Adaki, Kamal Shigli, Sivaranjani Gali.	Acrylic partial denture mandibular and Maxillary guide prosthesis	<ul style="list-style-type: none"> - Squamous cell carcinoma; - Right hemibesection of the mandible; - Radiation therapy treatment; - Deviation of the mandible and tongue to the right; - Reducing the amplitude of the opening of the oral cavity. 	Prosthetic treatments can restore the various functions of the dento-maxillary apparatus, such as mastication, swallowing, phonation, aesthetics. Acrylic prosthesis treatment can increase the quality of life of patients undergoing bone resection surgery.

13	2018	Marwa Mohammed Ali, Nadia Khalifa, Mohammed Nasser Alhajj ,	Maxillary obturator prosthesis	30 patients aged 16-78 years, wearing obturator prostheses following maxillary resection interventions for the treatment of malignant pathologies.	Rehabilitation of patients with obturator prostheses is an effective and non-invasive treatment option. Properly made obturator prostheses help to improve patients' quality of life.
14	2020	Thirumurthy V Ramasamy, Jagadish Chandra	Maxillary obturator prosthesis	- History of osteosarcoma; - Partial left maxillectomy, extended to the floor of the orbit, up to the midline;	The obturator prosthesis plays an important role in the recovery of the functions of the dento-maxillary apparatus, post-maxillectomy. Elastic prostheses can be useful due to the precise adjustment of the oral cavity and obtaining comfort for the patient
15	2020	Diandra Costa Arantes, Ricardo Antonio Alpino Rodrigues, Amalia Moreno.	Maxillary obturator prosthesis	- Total maxillary and mandibular edentation; - Tumor resection in the soft palate, palatine tonsils and oropharynx; - Oral-nasal communication - Accentuated atrophy of the edentulous ridges; - Left maxillary hemirection; - Background radiotherapy;	Obturator prosthesis can improve fonation, swallowing, chewing. Maxillofacial prostheses for the rehabilitation of patients treated surgically for various tumor pathologies is a challenge, each patient having different anatomical characteristics. The treatment must be individualized for each patient
16	2012	Kurien Varghese .	Velar obturator prosthesis	- Incomplete posterior cleft (palatal veil); - Hypernasality; - Reflux of food into the nasal cavity	Prosthetic rehabilitation of patients with velopharyngeal defects can be performed with the help of obturator prostheses. Their objectives are to correct the phonation and close the communication between the oral and nasal cavity.
17	2015	M R Dhakshaini, M Pushpavathi, Mirna Garhnayak, Angurbala Dhal.	Maxillary acrylic obturator prosthesis	- Incomplete posterior cleft; - Frontal partial edentation; - Hypernasality; - Reflux of food into the nasal cavity	It is necessary to carefully make this type of acrylic filling prosthesis to close the oral-nasal communication and improve the phonation. Multidisciplinary treatment of these patients is required
		Somayeh Hekmatfar, Karim Jafari, Samaneh Badkhsh	Total acrylic prosthesis Acrylic partial	- Ectodermal dysplasia; - Absence of mandibular dental units; - Maxillary oligodontics (4 conical incisors).	The treatment of small patients with acrylic prostheses is an acceptable, inexpensive option that improves the functions of

18	2012		<i>denture</i>	<ul style="list-style-type: none"> - Ectodermal dysplasia; - Oligodontics (a total of 11 dental units in both dental arches). 	<p>the dento-maxillary apparatus.</p> <p>The long-term success of this treatment consists of regular visits and adaptations of the prosthesis, as well as maintaining the hygiene status of the oral cavity.</p>
19	2012	Shashi Bala, M Nikhil, Anjali Narwal. -	<i>Total acrylic prosthesis</i>	<ul style="list-style-type: none"> Ectodermal dysplasia; - Anodontics; - Aged facial appearance; - Edentulous ridges with increased resorption. 	<p>Early prosthetic treatment of these patients is important.</p> <p>Total prosthesis is an effective treatment, temporary or permanent.</p> <p>Overimplant prosthetic treatment is contraindicated until completion</p>
20	2013	Bhavesh D Trivedi, Rupinder Bhatia.	<i>Maxillary acrylic partial denture and Total mandibular prosthesis</i>	<ul style="list-style-type: none"> - Ectodermal dysplasia; - Absence of mandibular dental units; - Maxillary oligodontics (4 teeth at the level of the arch, conical central incisors and 2 molars); - Aged facial appearance. 	<p>The treatment with acrylic prostheses is a fast, easy to achieve, economical approach for the aesthetic and functional rehabilitation of the dento-maxillary apparatus.</p> <p>This treatment improves the patient's quality of life.</p>
21	2013	R Ladda, SA Gangadhar, AJ Bhandari.	<i>Total acrylic prosthesis</i>	<ul style="list-style-type: none"> - Ectodermal dysplasia; - Maxillary and mandibular anodontics; - Atrophic edentulous ridges; - Decreased lower face floor. 	<p>Early prosthetic treatment ensures improvements in facial appearance, phonation, masticatory function.</p> <p>Multiple recall sessions are required for prosthesis adjustments or replacements</p>
22	2013	NCTeixeira Marques, C Vecchione Gurgel, AP Fernandes, MC Lima, MA Moreira Machado, S Soares,	<i>Maxillary acrylic partial denture and Total mandibular prosthesis</i>	<ul style="list-style-type: none"> - Ectodermal dysplasia; - Absence of mandibular dental units; -Maxillary oligodontics (4 teeth present at the level of the dental arch 	<p>Prosthetic rehabilitation of children must be performed from an early age, in order to maintain and improve the functions of the dento-maxillary apparatus.</p>
23	2015	Larissa Soares Reis Vilanova, Alfonso Sanchez- Ayala, Arcelino Farias- Neto.	<i>Total acrylic prosthesis</i>	<ul style="list-style-type: none"> - Ectodermal dysplasia; - Absence of mandibular dental units; - Maxillary oligodontia (4 permanent teeth present at the level of the arch: 11, 16, 21, 26 and 4 temporary teeth: 52, 55, 62, 65). 	<p>The realization of the total mandibular prosthesis allows the maintenance of the masticatory and phonetic functions, at the same time improving the aesthetics.</p>
24	2020	Anamika Bharati, Saumya Navit, Suleman Abbas Khan,	<i>Total acrylic prosthesis (superdental)</i>	<ul style="list-style-type: none"> - Ectodermal dysplasia; - Oligodontics (9 teeth present at both arches: 11, 12, 16, 21, 22, 26, 36, 42, 	<p>Ectodermal dysplasia requires early diagnosis and treatment.</p> <p>A multidisciplinary team,</p>

		Seema Jabeen, Nishi Grover, Meenakshi Upadhyay.		46); - Extensive edentulous gaps, atrophied; - Different degrees of horizontal damage to the teeth present on the arches.	an empathic and rational approach is needed for the treatment of patients, in order to improve the physical appearance and the psychological perception of the patient.
25	2014	Fouad A. Al- Omari, Mohammed M. Al Moaleem, Sulaiman S. Al- Qahtani, Abdullah S. Al Garni, Syed Sadatullah, Master Luqman.	<i>Acrylic partial denture</i>	- Parkinson's disease; - Partial maxillary and mandibular edentation; - Sanitation difficulties; - Ptialism	The psychological and behavioral changes encountered in Parkinson's disease make the stages of prosthetic treatment difficult. Satisfactory results can be obtained at the end of treatment. It is important to instruct the patient and caregivers on how to maintain and care for prostheses over time.
26	2017	Katarzyna Swider, Jacek Matys.	<i>Total acrylic prosthesis</i>	- Stroke; - Hypertension; - Thrombocytopenia; - Parkinson's disease; - Motor and sensory impairment in the tongue; - Total edentation.	To improve mastication and swallowing, it was decided to apply a pearl on the palatal plate of the total maxillary prosthesis. At the same time, this method helped to obtain and maintain the position of centric relationship by the patient, which is difficult to achieve normally due to the present motor deficit.

Descriptive statistics

The main features and findings of the studied and selected articles were graphically represented in the form of descriptive statistics.

The systematic review included articles from the literature presenting different treatment options using acrylic prostheses for patients with poor prosthetic field conditions or general conditions, that contraindicates the application of dental implants.

From the total number of 26 articles included in the systematic review, 73% refer to the treatment with acrylic prosthesis for patients with various malignancies. A percentage of 12% approach the prosthetic treatment for patients with ectodermal dysplasia. These patients suffer from anodontics or oligodontics. Five percent presented severe prosthetic field atrophy, 3% had cleft lip and palate and 3% presented general pathologies that indicate prosthetic rehabilitation with complete/ partial acrylic denture (Figure 2).

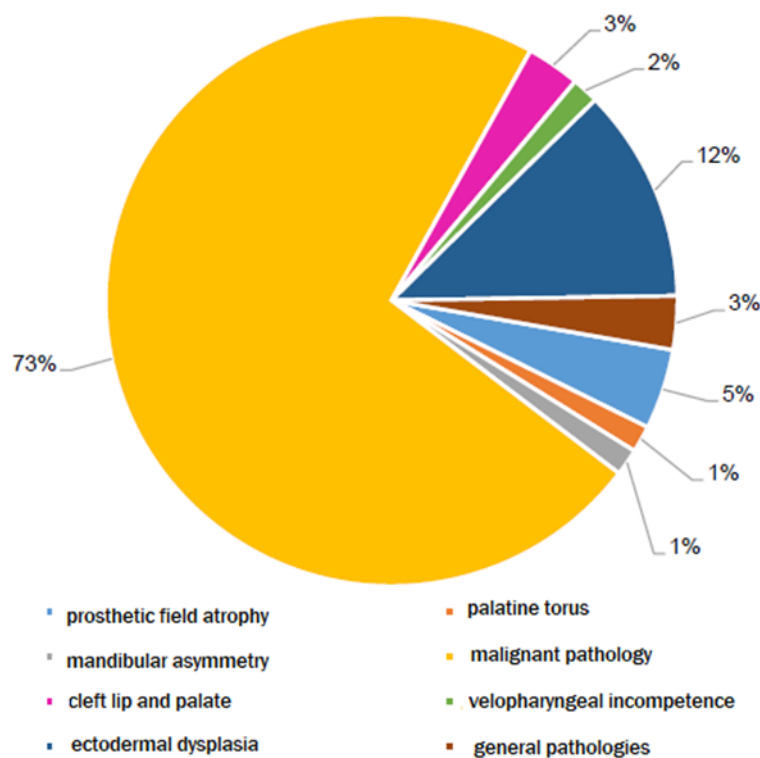


Figure 2: Distribution of pathologies found in the studied articles.

The articles studied and introduced in the systematic review were case report type (24 article) and clinical trial type (2 article).

Clinical trial studies included 10 and 30 patients with tumor pathology, that underwent resective surgery with defects in the jaw bones treated with obturator prostheses.

Case report studies included one or many patients with deficient prosthetic field treated with acrylic partial or complete dentures.

The treatment of edentulous patients can be achieved through different variants of acrylic prostheses. The most used were complete acrylic prostheses, applied to a number of 12 patients in order to rehabilitate de functions of dento-maxillary apparatus. The partial acrylic prosthesis was used for the treatment of 9 patients. A special category of acrylic prostheses are obturator prostheses, used to close various communications resulting from resective surgery on the jaw, this type was used for 49 patients: 47 patients had partial edentation (45 underwent resective surgery because of tumor processes and 2 presented cleft lip and palate) and 2 total edentation.

The tumor pathologies for which the surgical treatment was performed were malignant melanoma, squamous cell carcinoma, osteosarcoma of the maxillary bones. The treatment of these pathologies has been associated, in some cases, with radiotherapy.

Patients treated with acrylic prostheses are in different age groups, 3-83 years old and pediatric patients who were treated with acrylic prostheses were between 3 and 13 years old. The number of pediatric patients treated

with acrylic prostheses was 8 (3 patients between 0 and 5 years old, 3 between 6 and 10 years old, and 2 patients between 11 and 15 years old). The number of adult patients was 58 and the inclusion in a certain age range can be analyzed in figure 3.

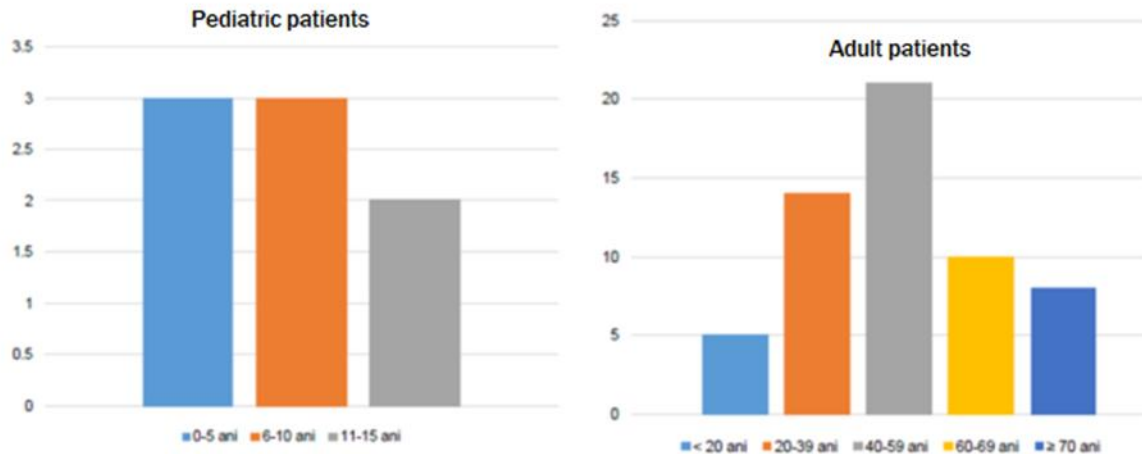


Figure 3 : The age of patients treated with acrylic prostheses.

4. Discussions

The articles included in the systematic review were case reports and clinical trials.

Case reports are descriptive studies that present the particularities of a particular case, the unusual or atypical conditions of some patients. Despite their limitations, case reports are beneficial experiences for medical culture for young graduates and novice researchers [33].

Clinical trial studies are research studies performed on humans, with the aim of evaluating a medical, surgical or behavioral intervention. These are the main ways in which researchers can find out whether a new treatment is safe and effective for human subjects [34].

The studies included a varied number of patients, but the majority of case report articles included a single patient. Clinical trial-type studies included 10 and 30 patients both studies focusing on prosthetic treatment of patients who underwent maxillary resection for the treatment of tumors.

The conditions of the prosthetic field or the general ones, treated with acrylic dentures, were very varied. There have been treated cases of severe atrophy of the edentulous prosthetic field, with the loss of dental units due to various causes, up to malignant cervico-facial diseases or general diseases such as ectodermal dysplasia.

Article published by Veeramalai ND and his colleagues describes the rehabilitation procedure of a patient with edentulous ridges with severe bone resorption. Total prosthesis treatment involves covering all areas of the prosthetic field for maximum support and the mounting of the artificial teeth so that the prostheses have stability

in the prosthetic field [7]. They must reproduce the occlusal plane, be located in the neutral zone, where there is a balance between the extra-oral muscles (lips, cheeks) and the endo-oral muscles (tongue), and in some cases atypical acrylic teeth can be chosen.

Another article published by Prathiba S and his colleagues presents the importance of functional areas in the treatment with complete dentures and the possibility of mounting artificial teeth in order to have a stable denture on the mandibular arch with accentuated bone resorption. This article emphasizes the importance of functional impression and the contribution of the perioral muscles to the stability of complete denture [9].

The article published by Manu Rathee and his colleagues approaches a variant of treatment of edentulous spaces with severe bone resorption. The case presented the treatment of an edentulous mandibular space with class III Siebert bone resorption, treated with a partial acrylic prosthesis and a special system, Andrews Bridge [8]. The marked bone defect resulted from a paramedian mandibular fracture. During the exo-oral examination, in addition to the skin scars, a depression of the skin near the edentulous space could be observed. A special system was used to treat this case. The teeth that bordered the edentulous space were prepared in order to be covered with crowns of total cover. The two abutment teeth were joined by a rectangular bar, at which level it was placed a magnet. In order to restore the anatomical contour of the lost bone support, a removable acrylic component was made, which was subsequently fixed at the level of the edentulous space, by means of the magnet [8].

In 2012 Benito Rilo and his colleagues presents in an article the case of a patient with velopharyngeal incompetence. For the treatment of this patient, an acrylic prosthesis was made for the velopharyngeal support, which reduces hypernasality. It consists of two parts, the anterior part = the base of the prosthesis and the posterior part, for velopharyngeal support, connected to each other by steel wires [12].

In the article published by Shobha JR and Sharon S, the treatment with acrylic prosthesis is used for a patient with surgical treatment of right hemi-resection of the jaw, because of malignant melanoma of the oral cavity. A one-piece maxillary obturator prosthesis was made for this patient to close the oro-nasal and oro-sinusual communication [13].

In the study published by Pravesh K and his colleagues 10 patients who underwent maxillectomy were included. Patients were treated with obturator prostheses and were instructed to wear them for a period of 6 weeks. During the study, phonatory tests were performed to record changes in phonation, word articulation, and nasality before, during, and after prosthetic treatment. Statistical results revealed minimal differences between preoperative status and 6 weeks after prosthetic treatment. Comparisons made postoperatively (after healing of the surgical wound) and after the application of prostheses showed significant differences both for nasality and for the articulation of words, demonstrating that the treatment with obturator prosthesis facilitates phonation. The results of the study show an improvement in the articulation of words after the application of obturator prostheses, intelligibility and a reduction in nasalization. Speech intelligibility improved postoperatively in 70% of patients 6 weeks after prosthetic rehabilitation[14].

The case published by Aditi Garg demonstrates the success of complete denture treatment in a completely edentulous patient with left hemiglossectomy. Following hemiglossectomy surgery, patients face phonation and swallowing problems, and treatment options include modified acrylic prostheses, speech therapy, and mobilization exercises [16]. Studies on the treatment of patients with jaw resection with obturator prostheses have shown a good acceptance of this type of treatment by patients, improving their quality of life. At the same time, the obturator prosthesis restores the masticatory, aesthetic and phonetic function of edentulous patients. In addition to the advantages offered by the obturator itself, by closing oral-nasal or oro-sinus communications, thus favoring normal swallowing and phonation, they can rehabilitate all the functions of the dento-maxillary apparatus, in a non-invasive manner, with lasting results. The obturator prosthesis can be chosen as a temporary or even permanent treatment option because there are different constructions of it, suitable for different clinical cases. Patients with oro-maxillo-facial splits need early treatment, starting with the infant period, to ensure the nutrition of these children. Postpartum prostheses can be applied after birth to close the defect and prevent the backflow of breast milk into the nasal cavity. Acrylic prostheses used for the treatment of splits may be temporary or permanent, requiring permanent adjustments of the prosthesis as the child and the dento-maxillary apparatus develop. In cases where surgical treatment is contraindicated or not desired by the patient, acrylic prostheses may be permanent, contributing to the proper functioning of the dento-maxillary apparatus and the social integration of patients. Prosthetic treatment of patients with ectodermal dysplasia is difficult to achieve, because the age of the patient, most of the patients included in the studies presented being children, aged between 3 and 13 years. On the other hand, the treatment is hampered by the accentuated resorption of the edentulous ridges, resorption caused by the absence of both temporary and permanent teeth. In the absence of the physiological stimulus exerted by dental units on continuous bone remodeling, the edentulous ridges of these patients are reduced in height and width. The pattern of bone resorption, gives patients a typical aged appearance, with accentuated anterior grooves, prominent chin and thin lips. This implies the need for early oral rehabilitation treatment of patients with ectodermal dysplasia. Rehabilitation of patients with ectodermal dysplasia by the aid of acrylic prostheses is a good treatment option, especially in children, where the processes of bone growth and remodeling take place at a fast rate. The acrylic prosthesis can replace the missing teeth, by applying artificial teeth to the prosthetic saddles and can also restore normal anatomical contours, by properly supporting the lips, circumscribing the mandibular arch by the maxillary arch and improving facial appearance.

The prosthetic treatment of patients with general conditions suggest the importance of knowing the comorbidities of geriatric patients. They often refuse surgical treatments because of the complexity of the general condition. The prosthetic treatment of these patients must take into account the number of missing teeth, the time and cause of loss of dental units, and these data must be correlated with the degree of atrophy of the edentulous ridges. The degree of atrophy and bone resorption influences the retention and stability of acrylic prostheses, especially mandibular complete denture. The correct performance of the clinical and technical steps can lead to satisfactory results in terms of rehabilitation of the functions of the dento-maxillary apparatus, as well as the quality of patient's life. The limitation of this systematic review would be the lack of inclusion of a larger number of randomized clinical trial studies, most of the articles were case reports. For this reason, there is a marked heterogeneity in the studies, which made it impossible to perform a meta-analysis, but a descriptive analysis was performed.

5. Conclusions

Prosthetic treatment with acrylic prostheses was possible, no matter how were the conditions of the prosthetic field or the general pathology of the patient. The majority of patients treated with acrylic prostheses have undergone jaw surgery and prosthetic treatment with the obturator prosthesis is suitable for these cases. The basic principles of prosthetic treatment are similar, the acrylic prosthesis being made and adapted according to the particularities of each clinical case. Patients of different ages, both adults and children, can be treated with acrylic prosthesis because acrylic prostheses rehabilitates all lost functions. Acrylic prosthesis treatment is an effective, fast, non-invasive and durable option and is the optimal treatment for pediatric patients, for which the growth processes are not complete. The acrylic prosthesis can be used successfully in the treatment of geriatric patients, who have various comorbidities that contraindicate surgical treatments.

6. Recommendations

We recommend the study of the scientific literature before applying a certain prosthetic treatment, so that we can offer to our patients an individualized treatment and at the same time an adapted treatment to the local and general conditions.

7. Author Contributions

The authors contributed equally to this work

8. Conflicts of Interest

The authors declare no conflict of interest

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