

Introduction and Purpose

Restoration of acquired maxillary defects or severely atrophic maxilla is challenging in Prosthodontics. The introduction of Zygomatic implants has opened avenues for such challenging situations. The purpose of the study was to evaluate existing evidence regarding survival rates, prosthetic design and complications associated with Zygomatic implants.

Materials and Methods

Available literature was systematically evaluated by two independent reviewers for the following research questions:

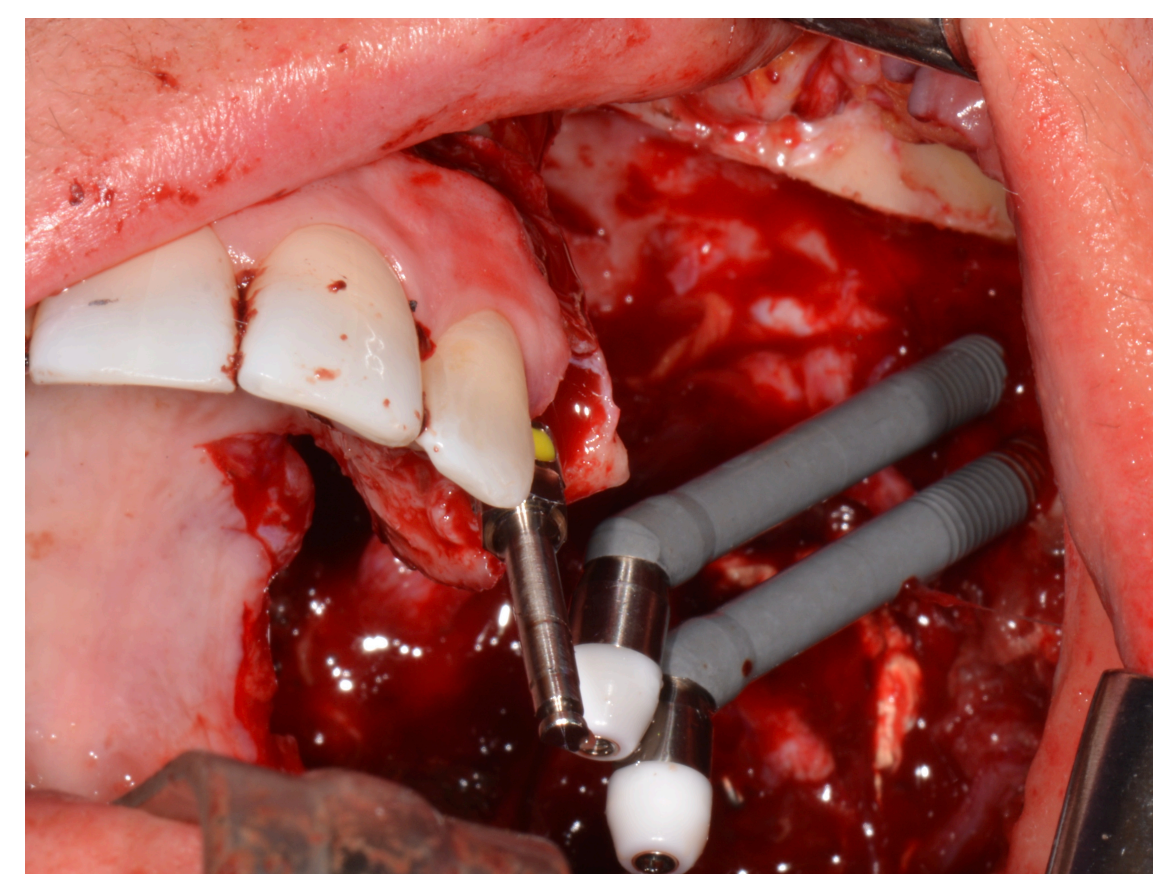
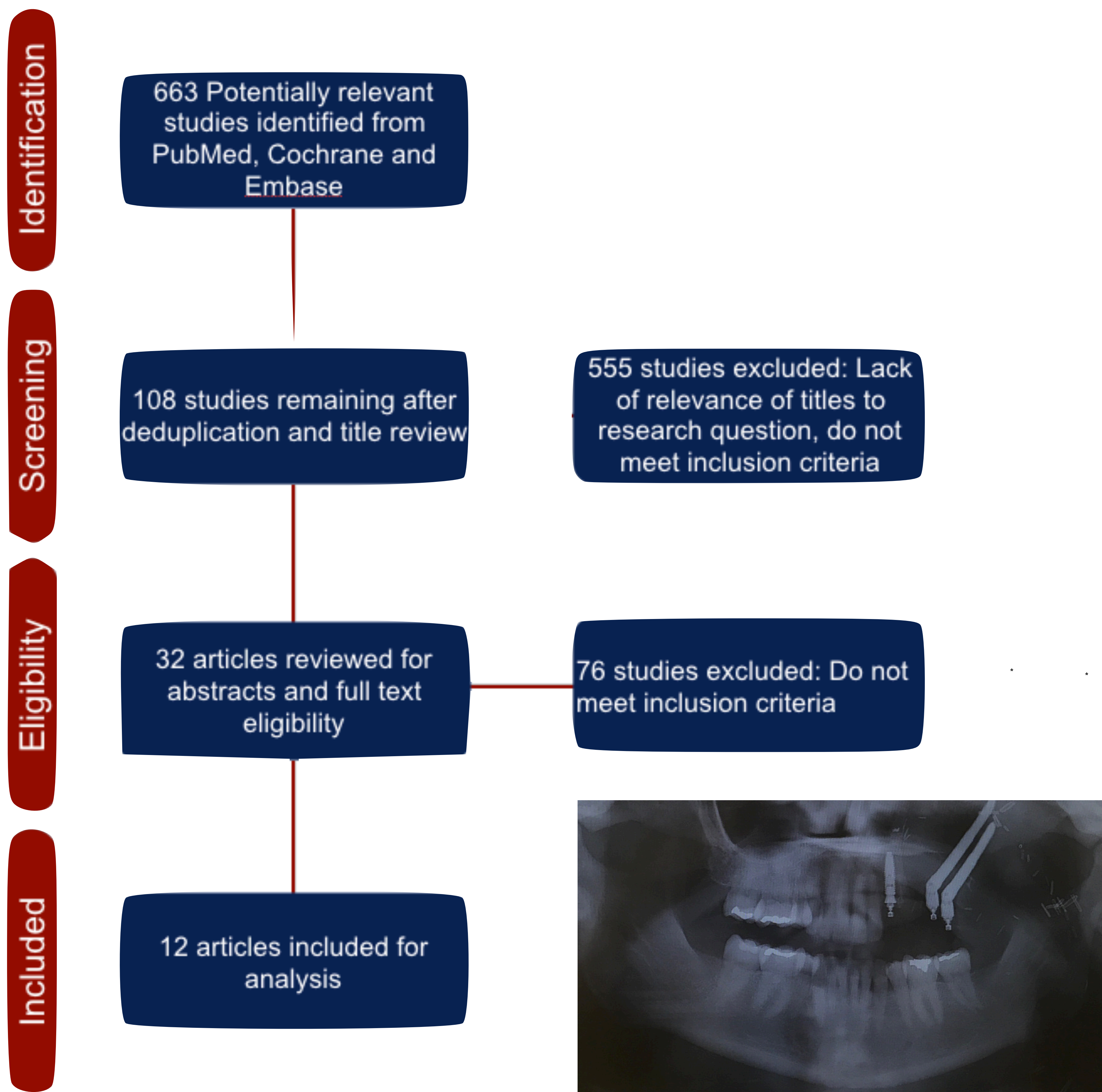
- Survival rates of zygomatic implants
- Effect of loading protocols to the survival rates of zygomatic implants
- Complications associated with zygomatic implants
- Prosthetic design with zygomatic implants

Search term: Zygomatic Implants

Inclusion criteria:

- Articles in English language
- Human prospective and retrospective studies and RCTs
- From January 1980 to June 2020

The PRISMA guidelines were followed for Systematic Review and are demonstrated in the adjoining flow chart.



Results

Early and intermediate survival rates for Zygomatic implants are comparable to those of conventional maxillary implants (94-100%). In cases of resection, loading is usually after 4-6 months of submerged healing. Immediate loading in the edentulous maxilla has been noted with high early survival rates (95-100%). Zygomatic implants are used in conjunction with axial conventional implants or two zygomatic implants bilaterally in a splinted design to support fixed, removable or maxillofacial prostheses. Common complications include Sinusitis and Rhinosinusitis. Implant failure rates are comparable to conventional maxillary implants.

Conclusions

Zygomatic implants can be used to improve the prosthetic outcome as well as quality of life of patients with acquired maxillary defects. Outcomes can be improved by adequate pre-operative planning and communication between the Surgical and Prosthodontics teams. There are case reports, prospective, retrospective cohort studies and RCTs documenting their short-term success and long-term survival.

References

- Davó R, Felice P, Pistilli R, et al. Immediately loaded zygomatic implants vs conventional dental implants in augmented atrophic maxillae: 1-year post-loading results from a multicentre randomised controlled trial. *Eur J Oral Implantol*. 2018;11(2):145-161.
- Chana H, Smith G, Bansal H et al. A Retrospective Cohort Study of the Survival Rate of 88 Zygomatic Implants Placed Over an 18-year Period. *Int J Oral Maxillofac Implants*. 2019 Mar/Apr; 34(2):461-470.
- Agliardi EL, Romeo D, Panigatti S, et al. Immediate full-arch rehabilitation of the severely atrophic maxilla supported by zygomatic implants: a prospective clinical study with minimum follow-up of 6 years. *Int J Oral Maxillofac Surg*. 2017 Dec;46(12):1592-1599.