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IMPLANT THERAPY OUTCOMES, SURGICAL ASPECTS

# SURVIVAL RATE, COMPLICATIONS AND PATIENT SATISFACTION WITH ZYGOMATIC IMPLANTS: A REVISION OF THE LITERATURE

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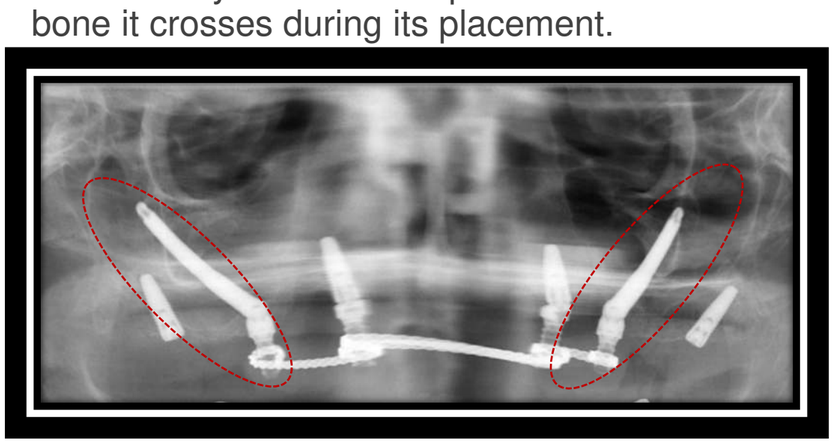
## Background and Aim

Zygomatic implants (ZIs) appeared at the late eighties to rehabilitate patients who had suffered resection of the maxilla. Nowadays, they are also used in patients with severe maxillary atrophy.

The stability of the ZI depends on the cortical bone it crosses during its placement.

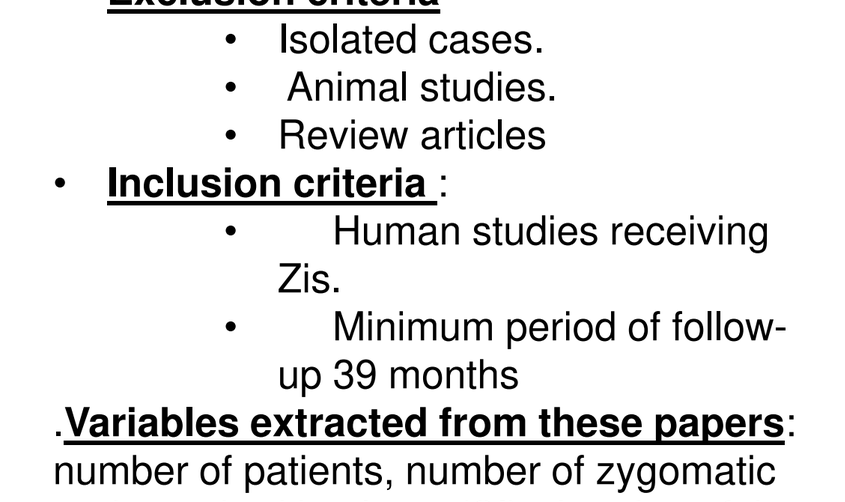


**Aim:** To assess the survival rate of ZIs; the prevalence of complications and satisfaction level of the patients based on previously published studies with a medium- and long-term follow-up.

## Methods and Materials


- An electronic search was performed in January/2017 in PubMed/Medline database and was supplemented by hand-searching.
- **Search strategies :**
  - {Subject AND Adjective}
  - {Subject: (zygomatic OR zygoma OR zygomaticus)}
  - {Adjective: (implant OR implants OR fixture OR fixtures)}.
- **Exclusion criteria**
  - Isolated cases.
  - Animal studies.
  - Review articles
- **Inclusion criteria** :
  - Human studies receiving Zis.
  - Minimum period of follow-up 39 months

.**Variables extracted from these papers**: number of patients, number of zygomatic and standard implants (SI), duration of the study, surgical technique, type of prosthesis, type of loading, complications, survival rate of the ZIs and satisfaction level of the patients.




## Results

STUDY SAMPLE AND SURVIVAL RATE

| | Patients | ZI | SI |
|---|---|---|---|
| **TOTAL** | 1638 | 3589 | 4117 |
| Nº failures | | 90 | 138 |
| global survival rate (%) | | **97,5** | **96,65** |
| **39-120 months** | 1336 | 2943 | 3711 |
| Nº failures | | 64 | 93 |
| survival rate (%) | | **97,82** | **97,5** |
| **>120 months** | 302 | 646 | |
| Nº failures | | 26 | 45 |
| Survival rate (%) | | **95,97** | **88,9** |

**ZI:** zygomatic implantes; **SI**: standard implants

SURVIVAL RATE ACCORDING TO SURGICAL TECHNIQUE

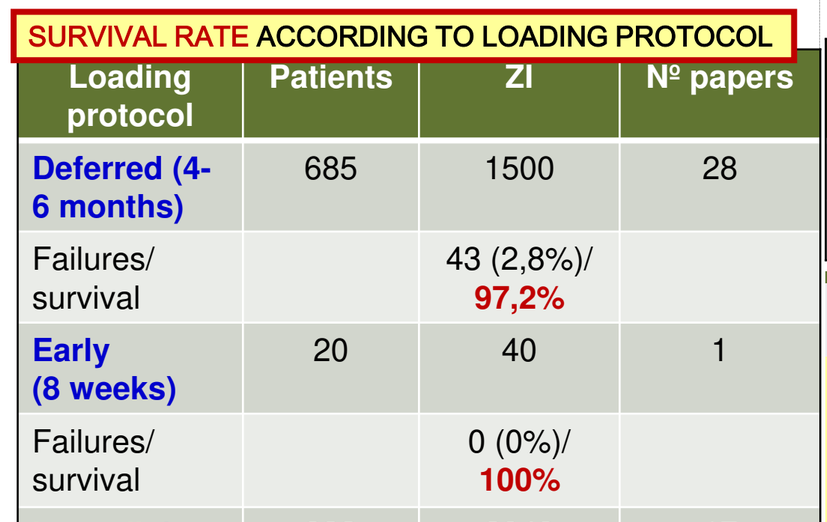
| Surgical techique | Patients | ZI | Nº papers |
|---|---|---|---|
| **CT** | 806 | 1710 | 24 |
| Failures/ survival | | 41 (2,26%)/**97,74%** | |
| **SS** | 144 | 341 | 6 |
| Failures/ survival | | 17 (4,9%)/ **95,1%** | |
| **ET** | 436 | 942 | 6 |
| Failures/ survival | | 11 (1,16%)/ **98,84%** | |
| **GS** | 5 | 10 | 2 |
| Failures/ survival | | 3 (30%)/**70%** | |
| **ZAGA** | 80 | 157 | 1 |
| Failures/ survival | | 5 (3,1%)/ **96,9%** | |
| **MZI** | 14 | 58 | 1 |
| Failures/ survival | | 2 (3,4%)/ **96,6%** | |

**CT:** clasical technique; **SS**: sinus slot; **ET**: extrasinusal technique**;** **CS**: guide surgery; **ZAGA:** Zygoma Anatomy Guided Approach; **MZI:** multiple zygomatic implants.

SURVIVAL RATE ACCORDING TO LOADING PROTOCOL

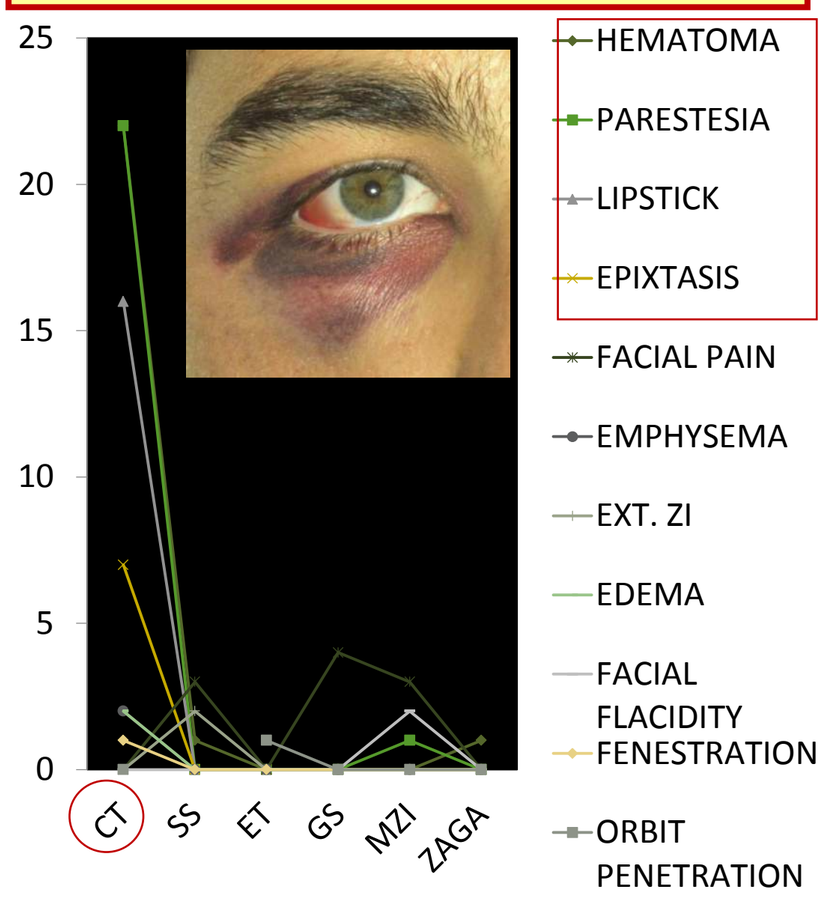
| Loading protocol | Patients | ZI | Nº papers |
|---|---|---|---|
| **Deferred (4-6 months)** | 685 | 1500 | 28 |
| Failures/ survival | | 43 (2,8%)/ **97,2%** | |
| **Early (8 weeks)** | 20 | 40 | 1 |
| Failures/ survival | | 0 (0%)/ **100%** | |
| **Immediate** | 933 | 2049 | 17 |
| Failures/ survival | | 144(2,14%) / **97,86%** | |

PROSTHETIC COMPLICATIONS ACCORDING THE SURGICAL TECHNIQUE

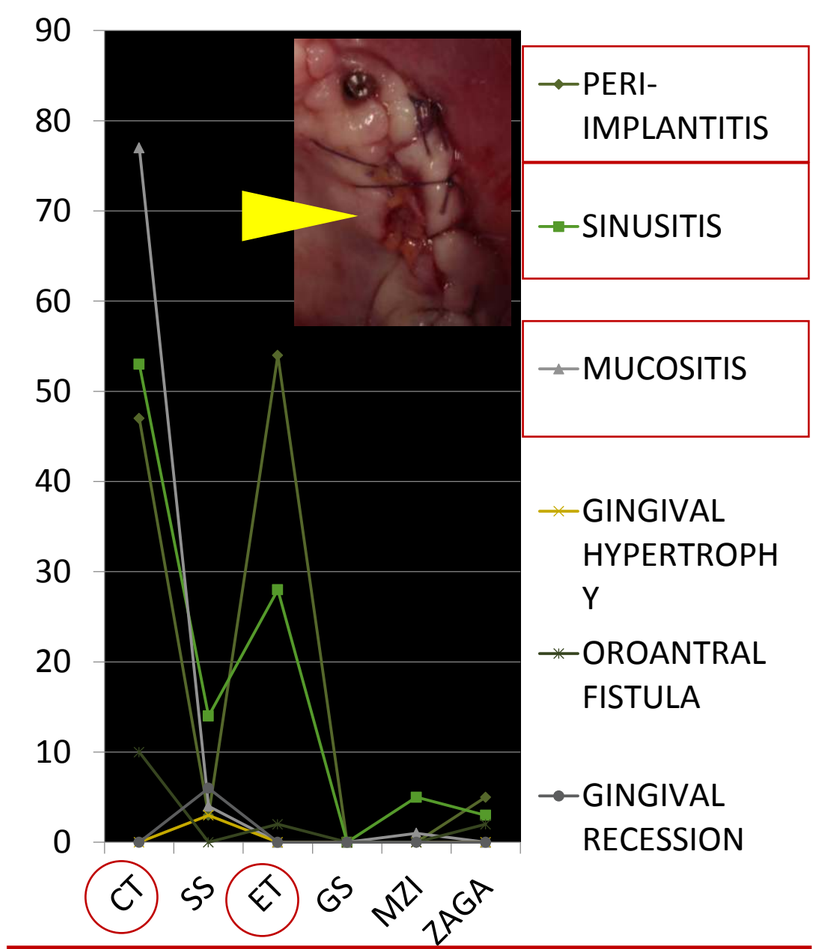



## Results

SURGICAL COMPLICATIONS ACCORDING THE SURGICAL TECHNIQUE




BIOLOGICAL COMPLICATIONS ACCORDING THE SURGICAL TECHNIQUE




SATISFACTION LEVEL

| Maximum satisfaction | Aesthetic | Function | Phonetic |
|---|---|---|---|
| PATIENTS | 354 | 346 | 334 |
| % | **89,4** | **87,4** | **84,3** |

## Conclusions

- The 5-years and 10-years **survival rate** of ZIs was 97.82% and 95.97% respectively and it was less with GS.
- Immediate loading is the current standard of **loading protocol** of the ZIs. Delayed loading achieves lower survival rate.
- The **surgical complications** depend on the surgical technique used, being higher in the CT.
- Mucositis and Sinusits are the most frequent **biological complications**, more prevalent with CT .
- Prosthesis fracture is the most frequent **prosthetic complication** followed by teeth fractures and loosening of screws.
- The maximum **satisfaction level** of patients was 89.4%, 87.4% and 84.34% for aesthetics, function and phonetics respectively
- Further studies are needed in the long term.

## References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