



Comparative Outcomes of Immediate versus Staged Implant-Based Reconstruction for Ameloblastoma



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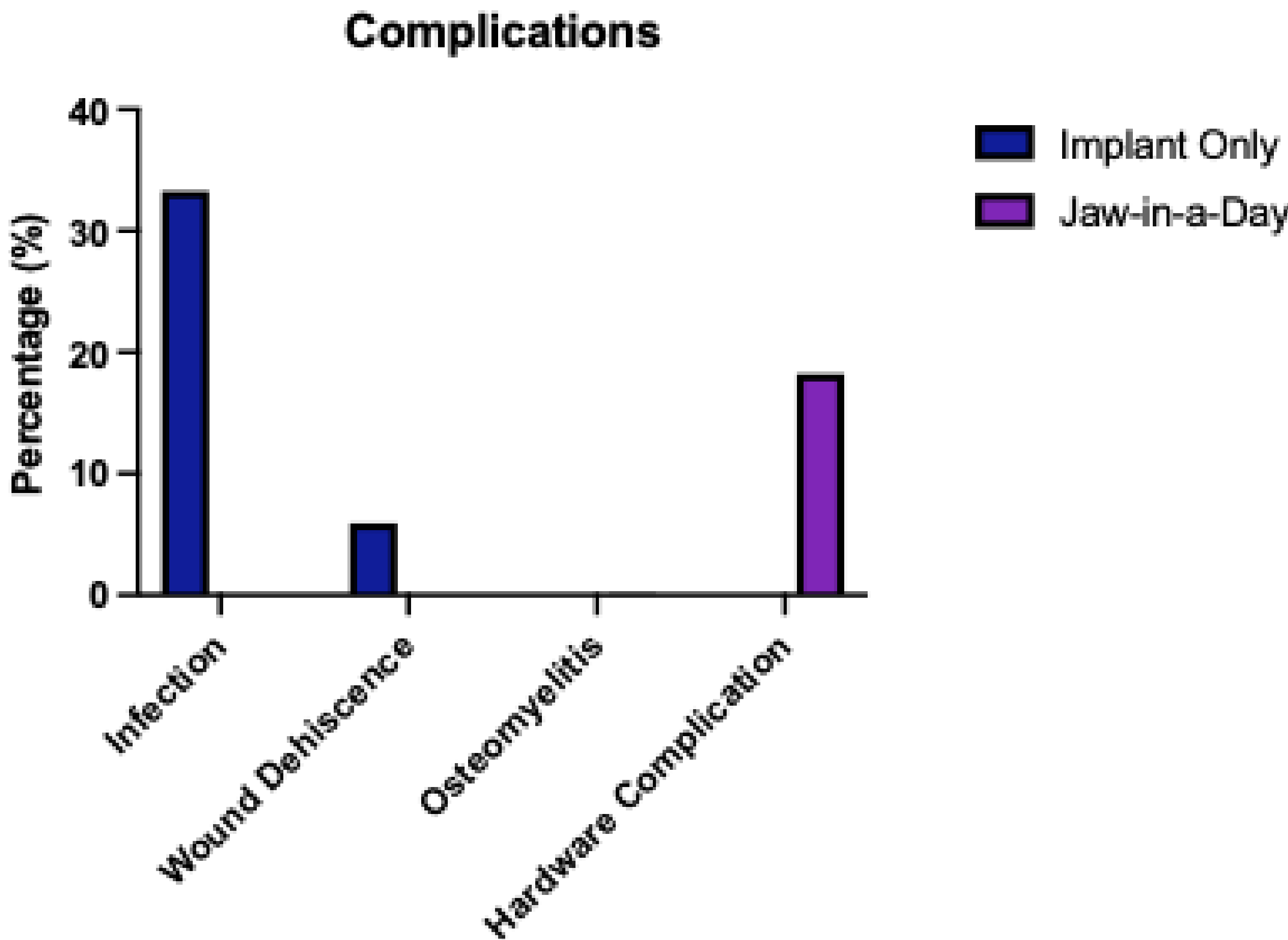
BACKGROUND

- Ameloblastoma is a locally aggressive odontogenic tumor requiring segmental jaw resection with significant functional an aesthetic morbidity
- Fibular free flap reconstruction enables restoration of mandibular continuity, but dental rehabilitation is often delayed
- Jaw-in-a-Day integrates immediate implant placement with dental prosthesis to enable same-day functional restoration
- Objective:** Evaluate the safety and outcomes of immediate dental rehabilitation compared to staged reconstruction

METHODS

- Retrospective review of patients undergoing surgical management for ameloblastoma at a single tertiary center (201—2025)
- Patients stratified by reconstructive strategy
 - Immediate implants +/- prosthesis (Jaw-in-a-Day)
 - Immediate implants without prosthesis (staged reconstruction)
- Primary outcomes: postoperative complications, operative time, blood loss, and functional outcomes
- Statistical analysis:**
 - Continuous variables: t-test or Mann-Whitney U
 - Categorical variables: Fisher’s exact test

RESULTS



	Implant Only	Jaw-in-a-Day
Operative Time (min)	456.9 (260.9)	652.0 (39.0)
Blood Loss (mL)	260.0 (133.8)	450.0 (70.7)

RESULTS

- Cohort:**
- 35 patients (mean age 45.5 years; 68.6% male)
 - Majority mandibular tumors (77.1%) with posterior predominance
 - Free flap reconstruction in 81.3%, most commonly fibula (72.7%); Double-barrel fibula technique used in 45.7%
 - Median follow-up: 67.5 months
- Reconstruction Strategy:**
- Immediate implants placed in 17 patients, 5 patients (29.4%) underwent Jaw-in-a-Day (implant + prosthesis)
 - Virtual surgical planning used in all cases
- Complications:**
- No significant differences in: infection, wound dehiscence, osteomyelitis, hardware complications, length of stay (p= 0.757); no flap failures observed
 - All Jaw-in-a-Day patients achieved adequate functional outcomes
- Operative Tradeoffs**
- Jaw-in-a-Day associated with: Longer operative time (644 vs 456 min, p – 0.013), greater blood loss (450 vs 260 ml, p = 0.016)

CONCLUSION

- Immediate dental rehabilitation is safe with comparable complication rates to staged reconstruction
- Despite increased operative time, patients achieved reliable early functional restoration
- This approach supports a function-driven reconstructive strategy prioritizing long-term quality of life
- Immediate dental rehabilitation enables restoration of form and function without added morbidity