

**FC-005****The LUMiC® prosthesis for reconstruction after periacetabular tumor resection: clinical results from eight European centers**

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Introduction: Limb-salvage surgery for periacetabular malignancies is highly demanding and associated with dissatisfying complication rates. We initiated the current study to evaluate the early- to mid-term clinical results of reconstructing a pelvic defect with the modular LUMiC® prosthesis (implantcast, Buxtehude, Germany) following internal hemipelvectomy for a periacetabular tumor.

Methods: All consecutive patients who underwent periacetabular tumor resection and subsequent reconstruction with the LUMiC® from 2008-2013 were reviewed, in eight European centers. Minimum follow-up was 12 months.

Results: Forty-five patients (24 males, 53%) with a median age of 57 years (12-78) were included. Nine (20%) had undergone previous surgery. Thirty-six (80%) had a primary malignancy (predominantly chondrosarcoma; n=20, 44%), six (13%) had metastatic tumors, three (7%) multiple myeloma. Median follow-up was 29 months (12-73) for 35 patients (78%) alive at final review, and 12 months (2-27) for ten (22%) deceased patients. Four stems (9%) were cemented. Twenty-eight (62%) had a silver-coated 60mm cup. In all, 22 (49%) required further operations. Nine (20%) had a dislocation. Two patients with recurrent dislocations underwent revision to a dual-mobility cup, after which no further dislocations occurred. Only one dislocation occurred in 22 (49%) primary dual-mobility cups (p=0.03). Three patients (7%) had a periprosthetic fracture. One implant demonstrated migration, resulting from poor initial fixation due to an intraoperative fracture. Infections occurred in 13 patients (29%), necessitating removal in four (9%). Infection rates did not differ for silver-coated cups (p=0.20). Local recurrences were diagnosed in six (13%). Estimated implant survival rates at two and five years were 93 and 86%. Mean MSTS-score at final follow-up was 21/30 points.

Conclusion: Infection remains of major concern after periacetabular resection, and it was the sole reason for implant removal. Nevertheless, most infected implants could be retained. None were removed for mechanical reasons. Dislocations did occur, but all were adequately managed with closed reduction or cup revision. Dual-mobility cups provided excellent stability. Although longer follow-up is needed, our results indicate that, when used with the dual-mobility cup, the LUMiC® is a reliable implant for stable periacetabular reconstruction after tumor resection.

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