

Purpose: This study evaluated the outcome of a minimally invasive technique that uses a ceramic hydroxyapatite cannulated pin (HA pin) for the treatment of simple bone cysts (SBCs).

Methods: Since 1998, 62 patients with SBCs have been treated either with continuous decompression by inserting a HA pin after curettage and multiple drilling (group 1, n = 36 patients) or with artificial bone filling after curettage (group 2, n = 26 patients). These patients were retrospectively analyzed for factors implicated in SBC recurrence.

Results: The overall recurrence-free survival was 84% with the mean follow-up of 31 months. Remaining or progressing cysts were seen in 8 patients after the surgery, of whom 7 underwent additional surgery. The recurrence rate was significantly higher when the cysts were found in the long bone, remained adjacent to the epiphysis, and in patients aged less than 12 years (log-rank test). Multivariate analysis results indicated that age less than 12 years was an independent risk factor of recurrence. No significant difference in recurrence rate was observed between groups 1 and 2. However, the mean operating time was significantly shorter in group 1 (57.5 minutes vs 94.5 minutes in group 2).

Conclusion: Our results suggest that cannulation using the HA pin is a less invasive technique compared with artificial bone filling and has a high cure rate. However, the recurrence rate was still high when the cysts were located in the long bone, remained adjacent to the epiphysis, or occurred in children aged less than 12 years.