

# Complications

# Tips and Tricks

## Complications

The most common complication in both methods was cement-nail debonding during rod removal. Cement retention was a problem in only two cases following rod removal. One incarceration of a rod with insertion was because of improper reaming and was treated with splitting the anterior femoral cortex, removing the rod (without debonding), reaming, and reinserting the rod. This patient has not undergone any additional surgical procedures.

Complications	No. of Patients	Percentage
Total no. of complications	13/52	25%
Mold complications	10/32	31.3%
Silicone tubing complications	3/20	15%

	M1: Mold	M2: Silicone Tubing
Cement nail debonding w/ removal	7	2
Debonding w/ insertion	1	0
Retained cement	2	0
Rod incarceration w/ insertion	0	1



**Method 1: Mold**  
Spotty coverage of rod.



**Method 1: Mold**  
Debonding of cement upon rod removal.

## Tips and Tricks



Cement removal instruments from an arthroplasty set are used to remove cement coating if it debonds during rod removal.

## Insertion Tips

1. Ream 2 mm more than the intended rod diameter (with coating) for ease of insertion.
2. When creating the rod, the room temperature should be cool to allow more working time.
3. Do not forget additional monomer when combining large quantities of antibiotic powder with cement.
4. Never use surgilube in place of ultrasound gel. It causes pitting in the cement coating.
5. Use the threaded rod insertion device while creating the cement rod to prevent cement from clogging the insertion threads.
6. Do not ream out interlocking holes before insertion—cement mantle may fragment. This does not occur when the interlocking holes are drilled *in situ*.

## Removal Tricks

1. For cement debonding with removal, the first instrument of choice is the J hook from the arthroplasty cement removal set. This is the most effective tool.
2. After initial removal attempts with arthroplasty cement equipment have failed, residual cement can be removed with sequential reaming and subsequent copious canal irrigation using a canal tipped pulsed lavage.
3. A distal vent hole or channel is often necessary to completely remove all retained cement if one must resort to reaming the cement coating.