We learned that the retrograde technique (pulling the hook out backwards) was superior in all measured survey outcomes including ease of learning and overall preference, but that the study was limited by using mostly individuals already familiar with fish hook removal.

Fish hook injuries are significantly more common than sheer number of presentations to the emergency room would indicate, as many of these hooks are removed outside of the hospital. Not much is known outside of case reports of hooks implanted in sensitive spots such as the eye or hand.

A group of physicians from Toledo, Ohio recently published an educational study which was also a good review of fish hook removal techniques. They developed an instructional video/course along with a simulation model and then instructed 34 doctors, mostly ED docs at various levels of training, and most (68%) with previous fish hook removal experience, about the different methods of removal. The model consisted of a pipe covered in a foam cover and 1.5mm thick layer of latex, and the educational materials included diagrams as well as a short instructional video. After an opportunity to work with the models, they surveyed the learners on four outcomes: ease of learning, ease of performing (first pass success), least subjective tissue damage, and overall preference of method.

The results were consistent with the following ranking for all caegories measured (1 being easiest/most preferred, 4 being hardest/least preferred):

1. Simple retrograde - pushing down on the eye/shank to disengage the barb, then pulling the hook out backwards)

2. String-pull - essentially the same, using a string tied around the bend to assist in rerograde removal

3. Advance and cut - advance the point through the skin, cut off the tip with the barb using wire cutters while holding the tip, and then removing the remnants of the hook in a retrograde fashion

4. Needle cover - inserting an 18g needle along the shaft and bend with the bevel down eventually covering up the barb and then removing the hook and needle together

Positives:

- Development of an instructional course and simulation model for a common problem one could encounter in the community or the ED

- Thorough discussion of the removal techniques

- Clear conclusion

Weaknesses/improvements/further study:

- Simulation was for shallow and not deep hooks

- Would be stronger if subjects were inexperienced and therefore unbiased

- Could integrate the experience of people who commonly deal with these in the outpatient setting such as fishing boat captains or professional fishermen

What we took away from our discussion of this topic as well as the experiences we'd had as a group was that if the hook is superficially implanted, then removing it in a retrograde fashion is likely the best option. However, if the hook is deeply implanted or the person presents to the emergency room, that the advance and cut method using available local anesthesia would be ideal. And of note, anectodal experience from our group was that many hooks are not able to be cut with simple trauma sheers and require a stronger device to cut them.