

SURGERY ON A SUBMERGED SUB

During World War II, a pharmacist's mate, Wheeler B. Lipes, performed a lifesaving appendectomy on Seaman Darrell Dean Rector aboard the submarine *Seadragon*.

The submarine was cruising in enemy waters in the Pacific at the time, and the closest thing to a doctor on board was pharmacist mate Lipes, a lab technician by training who had witnessed several appendectomies.

The skipper of the submarine, Lieutenant Commander William E. Ferrell, encouraged Lipes to attempt the operation and got Rector's consent to proceed. Ferrell took the boat into relatively safe water and submerged to 120 feet to provide a stable platform.

Lipes boned up on the appendix from a medical book. The ship's medical kit provided a few basics, including sulfa tablets, 12 hemostats, a packet of scalpel blades, catgut for sutures, and a limited quantity of ether. The rest of the instruments had to be improvised. A hemostat became a scalpel handle. Five tablespoons with the handles bent back served as retractors. Commercially sterilized *Handi-pads* substituted for gauze sponges. A tea strainer covered with gauze was utilized as a mask for administering the ether. Boiling water and torpedo alcohol provided sterilization.

The operation was performed on the wardroom table, barely long enough for the patient to stretch out on without his head or feet hanging over. Lipes didn't know how long the operation would last and whether there was enough ether. He had no way to do a blood count or urinalysis or to monitor the patient's blood pressure, nor was there any intravenous fluid. Nevertheless, the operation began.

Surgery was performed in the officers' quarters on Sept. 11, 1942 – the first appendectomy aboard a submerged submarine. Rector returned to his duties in 13 days.

The *Seadragon* returned to port six weeks after the operation. The medical officer of the submarine squadron pronounced Rector okay. After examining the appendix, the medical officer concluded that Lipes and his shipmates had indeed saved Rector's life. When the story broke in the press, Lipes became a national hero.

The story provides us with several principles:

1. It is true: Necessity is the mother of invention.
2. The training Lipes had received was crucial to saving the seaman's life.
3. Leadership was key to success. Lieutenant Commander Ferrell's encouragement for Lipes to go above and beyond the call of duty enabled him to organize the crew for an operation totally outside the realm of their experience.

Those lessons can be applied to the challenges we encounter.

– Beecher Hunter