

## Surgery Aboard the USS Boxer LPH4

I served aboard the USS Boxer for a little over a year in 1968-1969. I had completed my rotating internship at US Naval Hospital Pensacola and was assigned as the junior medical officer. The senior medical officer had completed 2 years of surgery residency.

The ship was a World War II Essex Class carrier that never saw action in that war but served in the Korean conflict. She retained the original straight flight deck but was eventually converted to a helicopter carrier in the amphibious fleet. If the ship could talk, it would brag about launching the first jet aircraft from a carrier in 1948, launching the first ship-board missile – a radio guided Grumman Hellcat fighter with a 1000-pound bomb. In 1958 her conversion to Helicopter Carrier initiated a new concept of an amphibious vessel capable of rapid deployment of marines to shore. She patrolled the Caribbean during the 1962 Cuban Missile Crisis. She also delivered 200 helicopters to Viet Nam in 1965, rescued civilians trapped in Haiti and Dominican Republic by Hurricane Cleo, then returned to rescue US Nationals and initiate intervention and occupation during the Dominican Republic crisis of 1964. She served as a primary recovery vessel for NASA and recovered the first unmanned Apollo capsule.

Ship's company was 2000 men and when fully complemented, carried a marine battalion of 1000 men and a helicopter squadron with 600 men. The squadron brought a flight surgeon, a physician with special expertise in the conditions characteristic of pilots such as middle ear problems due to altitude and inner ear, skeletal and circulation problems due to the G-forces from acceleration. And, of course, there was the stress from having to land a plane at 200 mph under full throttle on the short runway of a carrier deck which was also rocking with the swells, needing to hit the third wire or immediately take off again if it was missed.

We would be able to deliver the marines to a battle quickly but in the absence of war, we just showed the flag to a long list of islands and countries. Sick call included the marines as well as the sailors. In hot weather the engine room crew came to sit in the airconditioned sick bay, often moving back in line to prolong their wait. In the wet, windy cold weather, it was the deck crew.

When they had liberty, many came back beat up from drunken fights, some with sexually transmitted diseases and also common infectious diseases. We usually were within helicopter range of a shore-based hospital for serious cases. We once had to evacuate the executive officer after a cerebral hemorrhage.

Once, when out of range of any hospital, we had a large number of Marines complaining of abdominal pain, probably gastroenteritis, "stomach flu.". We were concerned about appendicitis. I had treated a sailor during my year at Pensacola who had ruptured his appendix and had a draining abscess for half a year. All of our abdominal pain patients on the ship got better except one.

There were no imaging studies. Diagnosis of appendicitis was clinical: nausea, low grade fever and right lower quadrant abdominal tenderness with rebound tenderness. That means that when pressing down slowly on the spot, there is minimal pain but when the examiner suddenly removes his fingers, the patient nearly jumps off the table. He had it. This indicates inflammation of the peritoneum, the lining of the abdominal cavity.

The senior medical officer decided that we had to operate. Ship's captains in the US Navy have an appendicitis protocol to use when they are on ships without a doctor. It consists of morphine, antibiotics and complete bed rest with the feet tilted down., The plan is to let the appendix rupture but wall off into an abscess to be drained later when the ship returns to a suitable facility.

We had three doctors, a senior medical officer who had done several appendectomies, a flight surgeon who was at least an experienced physician but with no surgical training and me who was fresh out of my internship, having taken a one-month elective in anesthesia. We planned everything out. Anesthesia machine, oxygen tanks, pentothal, anectine, syringes, IV tubing, normal saline, endotracheal tubes, laryngoscope, suction, anesthesia record and a lot of prayer.

We discussed the plan and I asked to do spinal anesthesia as I had done a lot of it in the obstetric service; I was ready to give a general anesthetic and intubate if the spinal anesthesia was inadequate.

The patient, a young Marine enlisted man, was moved to the operating table and an IV was placed in his arm. I talked to him about the anesthesia plan. We had given a mild sedative to help calm him. I sat him up for the spinal puncture. I calculated the dose of xylocaine and decided to make it a low spinal to avoid affecting his intercostal muscles which would decrease his breathing capacity. I did not want to be breathing for him for many hours. He was then laid down, his abdomen prepped with iodine and draped with sterile towels.

We noted that the temperature in the OR was warm. A corpsman called the bridge. Air conditioning was having trouble dealing with the 100-degree Caribbean heat and they had to prioritize the cool air to the primitive 1969 era computers.

The surgeon decided to supplement the spinal with a bit of local anesthetic around the site where he would make his incision, over the appendix. He tested by touching, then pinching the skin with a forceps. When there was no pain to a pinch, he made the first incision. Everything was fine through the muscle layers until he come to the peritoneum, the lining around the intestinal tract. At that point the marine reached his hands under the drapes, grabbed the surgeon's hands, and yelled, "Quit cutting on my belly!" We had not thought we would have to restrain him. I loudly shouted, "You can't touch there. That has to stay clean." He was used to following orders.

I said, "I'll put him under," turned on the anectine drip to paralyze the muscles and gave a half syringe of pentothal. I put a mask over his nose and mouth to begin administering

oxygen by bag. I looked for the anesthesia record and the clipboard had fallen on the floor and was covered in sweat – my sweat.

I looked at the dose I had given and realized that I had diluted it to 1/10<sup>th</sup> of what it should have been. A half syringe would not put him asleep. It had to be 5 syringes full, so I continued. After I had given the required dosage, I heard the alarm that the oxygen tank was empty. I called for another, and it was empty too. Then another which was full. The corpsman checked and half of the 10 tanks, sent to us as full, were empty.

Then the patient vomited. I sucked out his pharynx and got the endotracheal tube ready. Just before the tube went in, he turned blue. Intubation was successful and I connected it to the Ambu bag for positive pressure. With a couple of breaths his color was normal.

Then I heard the surgeon say, “It’s gotta be in here somewhere!” They had not found the appendix. There is a condition called “retrocecal appendix” where it is tucked behind the colon and hard to reach. By now the surgeon and first assistant were also sweating and I could not be sure some drops were not falling in the wound.

I began imagining the conversation we would have, **I would have**, with the captain, explaining why we thought we could do this. Suddenly, the surgeon had found the appendix and said, “keep him under until the last stitch is in. But I was lightening up the pentothal anyway, as I wanted to get him breathing on his own as soon as possible. As the last stitch was finished and the patient starting to flutter his eyelids and gag, I turned off the anectine. He started to breathe on his own, so I suctioned the pharynx and the tube and pulled it out.

He coughed three times and said, “I feel better.” I said, “So do I.” A moment later he said, “You know, for a while there I couldn’t breathe.” I told him, “We were going to breathe for you.” One of the most frightening things for surgical patients is to be paralyzed while still awake. Just at that moment, smoke began coming through the ventilation system and we had to evacuate sickbay. It turned out to be a temporary electrical problem. The patient was moved to be cared for by a medical corpsman in the senior medical officer’s cabin.

I had pictured brain damage, aspiration pneumonia and wound infection, all showing up later. He had no complications and in a few weeks was back with his unit at full duty. In the providence of God, despite all the potential disasters, it turned out well. When something went wrong, the solution quickly followed. It also helps to have young healthy patients.

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