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PHYSICIAN IN WAR

Oranges and Dead Fish

During the war, I came to love southern Croatia. Before that, apart from some fuzzy childhood memories, I had barely known it at all.

In the picturesque seaside village of Mali Zaton, situated in the Mali Zaton Bay in southern Dalmatia, an old wealthy family from Dubrovnik had their summer house. It was built of white marble during the mid 19th century, its archways giving it the appearance of a church. Most of the spacious garden was shaded by large, old trees, with strange thick leathery leaves. The rest of the garden was a small orchard with orange trees in full bloom. Their entangled branches formed a huge canopy whose edges touched the ground, sagging under the weight of the fruits. It all looked like a snapshot for a typical Mediterranean postcard, displaying the kind of immortal beauty you wished to last forever.

The current owners rarely used the house, and when they did, it was mostly to escape from the heat of the city walls and buzz of tourists during the hot summers. When the war started, they chose to remain in the city, and offered us the house to use it as a field hospital. I thought there could be no better place for the wounded – they would get well just by looking at the orange trees.

The long bay, a few kilometers away from the front line, was strategically an excellent place for the housing of the wounded. At that time, Dubrovnik was under total siege and reachable only by boat. So close, and yet so far! We would only exceptionally take a patient by a speed-boat to the Dubrovnik hospital under the cover of night, if the patient's condition required immediate treatment. This was always dangerous, but with the help of a few experienced captains and their fast boats, under weak light of the stars, we would manage the transport.

It was a hot Indian summer of 1992. The days were long and warm, and the sea calm and crystal clear. And then, as I stood under the boughs of orange trees, I suddenly heard a deep, muted explosion, and felt a tremor from some unfathomable deep, a tremor that raced up to my brain, bringing along fear. I ran in panic with our nurse Snježana to the upper floor of the field hospital and rushed all patients to the ground floor. We watched the sea rear up as a giant snake, throwing anchored boats onto the shore, flooding our garden, and momentarily covering the orange trees with water. The tremor gradually stopped, and the waves beat against the shore with waning strength.

It had not been an earthquake but underwater explosion of a shell in our bay. But where had it come from? We had not heard a plane pass over – it must have come from one of the Serbian artillery batteries, although we had thought it impossible for them to reach our sheltered position. I wondered if there was a place in which I would ever feel safe?

Before the explosion, I had seen Baldo, a local fisherman, fishing in the middle of the bay. Now only his empty boat could be seen, rocking in the waves.

During my work at the Emergency Department of the Split Hospital, I had treated many victims of drowning and also a few fishermen who had been injured while illegally fishing with explosives, so I had some experience with the treatment of water blast injuries. As my well-recovering patients rowed our boat towards the place where Baldo had last been seen, I pondered on the effects of hydraulic pressure and compression on human body, water wave speed of at least 1,500 m/s, and critical distance from the blast center and human body. Domagoj was the first to see the body, floating face down. The four rowers in our little boat raced across the sea, dead fish all around, as if they were in a prestigious rowing competition, while I calculated the distances and hoped Baldo was further than 80 feet from the bomb when it exploded. Two of the rowers then jumped into the sea, and we helped them haul Baldo into the boat.

The gravity and type of water-blast injury depends not only on the distance from the explosion epicenter, but also on the position of the body in the water. The injury is more dangerous if the body is submerged or lying on the belly, and less severe if the person is on a floating object or lying on the back. I could not see any external injuries on Baldo. He was cyanotic and apneic, and the carotid pulse could not be felt. Pink foam came out of his mouth and nose, indicating that he had pulmonary edema. It did not matter whether the edema was caused by a lung injury due to the water blast or drowning, the reanimation procedure was the same. As we rowed back to the shore, I knelt over Baldo, cleaning his mouth and giving cardiopulmonary resuscitation. The foam kept coming out of his mouth and we could not use a reanimation balloon. As soon as we got him on the pier, I made endotracheal intubation. Snježana ventilated him, Domagoj performed heart massage, and I aspirated his mouth. Soon we could see spontaneous chest movements in between the ventilations. We

started an i.v. line with 1 mg adrenaline in 10 mL saline, 1 mmol/kg sodium bicarbonate, and saline infusion. As we could not determine blood pH, we continued to administer half a dose of bicarbonates every 10 minutes. Soon I could feel the pulse, which was bradycardic and arrhythmic, so I administered a bolus dose of 100 mg lydocaine. Baldo started coughing and twitching. This was a pleasant sight for us – he was coming back. I soon took the endotracheal tube out and put an oxygen mask on his mouth. He breathed spontaneously and his pulse stabilized.

Obviously, Baldo was not under water too long to be beyond cardiopulmonary resuscitation, but the submersion lasted long enough to cause unconsciousness, pulmonary insufficiency, and brief cardiac arrest. However, drowning causes a number of other pathophysiological changes, such as hypoxemia, acidosis, circulatory impairment, hematological changes, infection, and possible renal and myocardial insufficiency. Drowning in hyperosmotic sea water carries additional risks: when salty water reaches the alveoli, it does not only irritate but also causes diffusion of fluid from blood and cells, leading to hypovolemia and hemoconcentration. As all these disorders require urgent hospitalization, we had to take Baldo to the Dubrovnik hospital. There the physicians excluded internal injuries and fractures. Because of the signs of increased intracranial pressure, rectal administration of 10 mL of 50% glucose, 250 mL mannitol, and 50% magnesium sulfate was indicated. Baldo stayed a few days in the hospital. After the discharge, he told us that he was more than 100 feet away from the explosion epicenter. He was lucky that the boat overturned and protected him, although he was knocked out by the blast and fell into the water. But, as they say, all's well that ends well.

After we returned from Dubrovnik, I stood in front of our field hospital, watching the orange trees. The sun reflected off the scales of the dead fish that sea had cast ashore, creating a bluish glow under the trees. Dead fish were everywhere. The beach was full of them, their dead and murky eyes staring up into the sky.

In the summer of 2003, I attended an exhibition of a still nature painter. One of the paintings depicted dead fish on a stone table, and beside them, a bowl of fresh oranges. I froze when I saw it, the flood of memories rushing back. How could memories be so vivid and clear even after eleven years? Were they so deep and intense that they would burden me my whole life? I had to leave and sit by the sea. There was so much pain and sorrow in these waters. And silence. I was engulfed in emptiness and fear – if I jumped, would I dive among dead fish? I didn't jump. I let the darkness fall on me.

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