Shark attack: the emergency presentation and management

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DESCRIPTION

A previously healthy 32-year-old man, a body-boarder, was transported to hospital by primary retrieval helicopter, within 2 h of a shark attack injuring both legs. Tourniquets were applied bilaterally to decrease haemorrhage. En route to hospital he was intubated with an endotracheal tube due to severe agitation from acute blood loss (figures 1 and 2).

On arrival, the patient was transferred directly from helipad to theatre. Observations suggested significant blood loss (systolic blood pressure (BP) <90 mm Hg, pulse rate (PR) >130 bpm), prompting initiation of rational thromboelastometry (ROTEM)-guided massive transfusion.¹ Complete transfusion consisted of 1 L normal saline, 10 U packed red blood cells, 1 U platelets, 9 U cryoprecipitate, 1 U fresh frozen plasma and 4 g fibrinogen concentrate. This resulted in haemodynamic stability (BP

120/60 mm Hg, PR 125 bpm) allowing for initiation of lifesaving surgery within 1 h of arrival.

Initial intraoperative exploration revealed an extensive laceration on the left leg and a smaller medial thigh wound on the right leg (figure 3). All wounds were irrigated and debrided. Owing to the injury location, the left popliteal artery was visualised but found to be uninjured, however, immediate thrombectomy was required for a left popliteal vein thrombus. X-rays revealed teeth marks to the left femur and an avulsed fibular head (figures 4 and 5). Prophylactic antibiotics (cephazolin, metronidazole and gentamicin) were administered. The patient was admitted to intensive care unit.

In the past two decades, 186 shark attacks have occurred in Australian waters, 63% of these resulting in injury, and 11.8% resulting in death. The rising incidence is strongly correlated with increasing numbers of people entering the water.²

Figure 1 Right leg wounds with tourniquet applied to thigh; picture taken on arrival to hospital.

Figure 2 Left leg wounds with tourniquet applied, showing extensive injury to the thigh; picture taken on arrival to hospital.

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Figure 3 Initial intraoperative image of the patient's injuries. Left leg had an extensive laceration from anteromedial distal thigh extending laterally down to the fibula with an avulsed fracture of the fibula head, transected common peroneal and tibial nerves, exposed popliteal fossa and knee joint, damaged vastus lateralis muscle and bite marks on the femur. Right leg had a smaller open wound on the medial thigh.

Figure 4 Plain lateral radiograph of left femur and knee displaying shark bites on anterior surface of femur and avulsed fibular head, indicated with arrow.

Figure 5 Plain anteroposterior radiograph of the left knee joint displaying an avulsed fracture of the fibula head.

Learning points

- ▶ Importance of prompt identification and initiation of treatment in the setting of acute blood loss.
- ▶ Importance of rapid response and retrieval times, in optimising patient outcomes.
- ▶ Importance of combining a focused history and examination with radiological adjuncts in a trauma setting.

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