

Puff Adder Bite in Ireland

A. Engelbrecht

St. Vincent's University Hospital, Dublin.

Legend tells of St Patrick who banished all snakes from the island of Ireland in the 5th century A.D. This case however describes what is thought to be the first potentially fatal snake bite in Ireland.

Great was the surprise, mere days before the annual St Patrick's Day celebrations, when a Regional Irish Emergency Department received a 22 year old amateur Herpetoculturist, with an array of exotic reptiles and amphibians in his collection, who had been bitten by a Puff Adder on the first web space of the right hand.

The Puff Adder (*Bitis arietans*), a heavy-bodied viper species, widespread through Southern Africa, is potentially cytotoxic, causing severe pain, swelling, blistering and in many cases, severe tissue damage. Extensive necrosis, compartment syndrome, deep venous thrombosis, hypotension and coagulopathy are uncommon, but devastating complications. Fatalities are rare. Polyvalent antivenom (The South African Institute of Medical Research (SAIMR) Polyvalent Snakebite Antiserum (SAVP)) is effective and should be administered sooner rather than later.¹

On initial presentation, more than 90 minutes after the bite, the patient complained of severe pain in the right forearm, with extensive soft tissue swelling of the hand. Initial management included the removal of the applied compression bandages, limb elevation and analgesia. Compression bandages are not recommended for cytotoxic snakebites as these can worsen local tissue damage if done too tightly or incorrectly. An arterial tourniquet should never be used.²

Throughout, the patient remained haemodynamically stable with no signs or symptoms of systemic envenomation (hypotension and coagulopathy) - a rare, but severe, life threatening complication.

Within 4 hours, the soft tissue swelling, and erythema extended up to the elbow, with ongoing severe pain in the affected limb, only transiently relieved by opioid analgesia. Swelling up to the elbow within 3-4 hours suggests severe cytotoxic envenomation and is an indication for antivenom administration. The antivenom will not "reverse" the existing tissue damage, but will limited further damage.^{2, 3}

The SAVP polyvalent antivenom is not available in Ireland and would typically need to be sourced from mainland UK, with the inevitable delays in administration. On this occasion, fortunately, the antivenom was sourced by the National Poison Centre, from Belfast and arrived in Dublin within 2 hours.

Prior to administration of the antivenom, the patient was pre-treated with adrenaline subcutaneously², in anticipation of a potential early anaphylactoid reaction to the antivenom, occurring in up to 76% of case.⁴ Thereafter, an initial dose of 50 ml of the SAVP polyvalent antivenom was administered intravenously. No adverse reactions occurred, and no subsequent doses were required.

Subsequently no further significant soft tissue damage developed, and the patient required only analgesia and physical therapy.

The island of Ireland should no longer be believed to be snake-free. These snakes are exotic and antivenom will likely not be available locally. The inevitable treatment delays can lead to significant morbidity and/or mortality.

Corresponding Author:

A. Engelbrecht
St. Vincent's University Hospital, Dublin
Irish Association of Emergency Medicine (IAEM)
Emergency Medicine Cape Town (EMCT)
Email: aengelbrecht@svhg.ie

References:

1. African Snake Bite Institute. Puff Adder. [Internet]. South Africa. Available from: <https://www.africansnakebiteinstitute.com/snake/puff-adder/>
2. Müller G, Modler H, Wium C, Veale D, Marks C. Snake bite in Southern Africa: Diagnosis and Management. CME 2012; 30(10).
3. Blaylock R. The identification and syndromic management of snakebite in South Africa. SA Fam Pract 2005; 47(9): 48-53.
4. Moran N, Newman W, Theakson R, Warrell D, Wilkonson D. High incidence of early anaphylactoid reaction to SAIMR polyvalent snake antivenom. T Roy Soc Trop Med H 1998; 92(1):69-70.