Extensive laryngo-pharyngeal haematoma in a warfarinised patient requiring emergency tracheotomy

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Citation

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Abstract

Airway haematoma is rare and life threatening condition. It occurs almost exclusively in patients with coagulopathies, often in those receiving warfarin. We present a case of an extensive laryngo-pharyngeal haematoma causing acute airway compromise in an over-warfarinised patient. Emergency tracheotomy was required within 8 hours of presentation. We advocate a high index of suspicion of airway haematomas in coagulopathic patients presenting with upper aerodigestive tract symptoms, detailed airway evaluation and monitoring with flexible laryngoscopy, and timely intervention as necessary.

INTRODUCTION

Warfarin is a commonly used anticoagulant drug (0.5-1% of the UK population [1]), with common indications including artificial heart valves and atrial fibrillation. It acts by antagonising the action of Vitamin K; which is a cofactor in the hepatic synthesis of coagulation factors II, VII, IX, X, and protein C and S.

The main complication of warfarin is over anticoagulation, and consequent haemorrhage; this is commonly the result of drug interactions. The mechanisms of drug induced warfarin potentiation include: interference with protein binding (e.g. sulfonamides), inhibition of warfarin metabolism (e.g. ciprofloxacin, omeprazole and ethanol) [2,3] . In addition, the anticoagulative effect of warfarin can be compounded by dysfunction in other pro-coagulant mechanisms, such as decreased absorption of Vitamin K (e.g. ethanol) and platelet abnormalities.

It has been shown that there is a 6.8% incidence of haemorrhage in patients receiving warfarin [4] . In Otorhinolaryngological practice, this commonly presents as epistaxis. Other specialties manage different manifestations, such as haematuria, subconjunctival haemorrhage and melaena. Intracranial and gastrointestinal haemorrhage can be fatal [5] . Haematoma resulting in airway compromise is rare, but can also prove lethal.

Airway haematomas have been described affecting the sublingual and retropharyngeal spaces [6,7] , and less commonly the larynx [5,8,9,10,11] . Most are managed conservatively with airway observation, oxygen, reversal of the coagulopathic state and parenteral steroids [5,6] . Emergency endotracheal intubation is rare [8,10] , delayed tracheotomy is unusual [11] , and emergency tracheotomy, at the time of presentation, is undescribed in the literature. Surgical airway interventions are more commonly described for sublingual [6] and retropharyngeal haemorrhages [7,12] .

We present a case of an extensive supraglottic and hypopharyngeal submucosal haematoma in a warfarinised patient requiring emergency tracheotomy. To the best of our knowledge this case is unique in its anatomical extent, involving both the larynx and pharynx, and requirement for emergency tracheotomy.

CASE REPORT

A 64-year-old alcoholic man presented with sudden onset neck ecchymosis and swelling, and stridor. He denied any preceding trauma. His past medical history included infective endocarditis, mitral valve replacement, and coronary artery bypass grafting resulting in long-term warfarinisation. His International Normalised Ratio (INR) had been well controlled for many years, and was being monitored on a monthly basis at the time of presentation.

He had suffered with alcoholism for several years and attended a local support group. However, in recent weeks he had been made redundant, and was consequently consuming more alcohol than usual.

On examination the patient was found to have extensive

ecchymosis over his face, upper and lower limbs (Figure 1) and inspiratory stridor. The examination of the chest was unremarkable, except for a mechanical valve murmur on auscultation. Flexible laryngoscopy revealed extensive submucosal haemorrhage affecting the hypopharynx and supraglottic larynx. The airway was almost completely obstructed and there was pooling of saliva in the piriform fossae. Pulse oximetry revealed fluctuating levels of saturation between 78 and 90%,

Figure 1

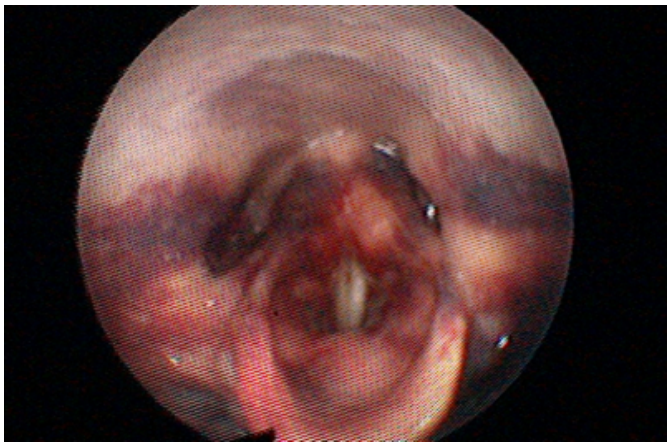
Figure 1

Haematological analysis revealed an INR of greater than 9 and a haemoglobin of 10.6g/dL. 12.5mg of Vitamin K, 3 units of Fresh Frozen Plasma (FFP), parenteral steroids, adrenal nebulisers and oxygen was administered.

He was observed closely for 8 hours after initial presentation. After which his condition deteriorated and emergency surgical tracheotomy was performed with a size 8 adjustable flange tube was inserted.

Figure 2

Figure 2



Post-operatively he was felt to be at risk of aspiration following a swallowing assessment and a nasogastric tube was placed for 7 days. The haematoma gradually reduced in size, with the vocal folds clearly visible by day 3 (Figure 2). He was given unfractionated heparin initially, and warfarin was restarted when the haemorrhage had all but disappeared. The patient was decannulated on the 21 st post-operative day, when the INR was in therapeutic range and repeat endoscopies showed no recurrence of the haemorrhage. Total inpatient stay was 22 days.

Initially he was reviewed frequently on an ambulatory basis. At six months he was discharged from the outpatient clinic.

DISCUSSION

Airway haematoma is a rare and life-threatening complication of warfarin therapy. Doctors and patients need to be aware it can present in the early stages with vague symptoms, such as a sore throat [9] . However later presenting symptoms include dyspnoea, stridor, dysphagia or neck swelling/ecchymosis. Early recognition of this condition can allow successful conservative management and obviate airway intervention. The aetiology of such airway haematomas has been postulated to be the result of local trauma (from vigorous sneezing or coughing [5]) or infection [13] .

Patients themselves must also be cognisant of the possibility of drug and food interactions with warfarin. Instruction for which must be rigorously provided by the doctors responsible for their care. A history of good INR control does not preclude excessive anticoagulation due to these interactions. Alcoholics, in particular, need to be advised that changes in their alcohol consumption can have dramatic affects on their anti-coagulation; and that they should seek medical attention during such times for more frequent monitoring and surveillance for complications.

There is general consensus that such patients need thorough airway evaluation with flexible laryngoscopy, close airway observation, oxygen therapy, and reversal of the coagulopathic state, with Vitamin K and either Fresh Frozen Plasma (FFP) or Prothrombin Complex Concentrate, as recently described [6] . There is some controversy as to whether patients should routinely undergo intubation or tracheotomy/cricothyroidotomy, or simply observed, with any intervention withheld unless or until the patient deteriorates. Cases for both sides of the discussion have been reported in the literature [14,15,16] . There have been several cases of failed intubation due to further haemorrhage from

the trauma of the intervention and the distorting affect of the haematoma on the local anatomy [6]. Surgical interventions are less than ideal in an anticoagulated patient, especially if undertaken in an emergency with acute airway compromise. It has been argued that cricothyroidotomy may be a more preferable procedure in such cases, as the dissection is through relatively avascular tissues [9], and the duration of the surgical airway is likely to be short.

Finally, the literature also suggests that isolated laryngeal haemorrhages are less likely to require an airway intervention than sublingual and retropharyngeal haematomas [5,6,7,8,9,10,11]. Perhaps this is due to the potential for expansion of the subliginual and retropharyngeal spaces during haematoma, and indeed abscess, formation. In our case, the pathological process appeared to be submucosal haemorrhage with subsequent mucosal oedema, demonstrated by repeated flexible laryngoscopy. There was little in the way of a haematoma "mass" with consequent anatomical distortion visualised. In contrast, sublingual and retropharyngeal haemorrhages appear to result in a more recognisable haematoma. The mass-effect of which distorts local anatomy causing marked airway compromise. This has been previously described as a "pseudo-Ludwig phenomenon" in the case of a sublingual space haematoma [17].

CONCLUSION

Our case highlights the potential dangers of warfarin therapy, and how rapidly an airway haematoma can become life-threatening. We recommend consideration of this diagnosis in coagulopathic patients, thorough endoscopic airway evaluation, frequent observations for signs of obstruction, and timely intervention based on clinical evaluation.

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