Extensive subcutaneous bleeding after cardiopulmonary resuscitation and thrombolytic therapy

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SUMMARY

A patient with acute myocardial infarction, complicated by pre-hospital cardiac arrest, was treated with anistreplase, heparin and aspirin following resuscitation. She developed a large lower lip haematoma and extensive bruising over the chest wall ten hours after thrombolytic therapy. A blood transfusion was required.

CASE REPORT

A 59-year-old woman experienced chest pain and was found collapsed in the bathroom. The general practitioner attended and discovered the patient lying on her back, cyanosed and apnoeic, with no palpable pulse. There were no signs of injury or bleeding. Basic life support was started and an extended-trained (para-) medic ambulanceman arrived 15 min later. The patient was in ventricular fibrillation and received a 200-joule shock resulting in an idioventricular rhythm with no output. Uncomplicated endotracheal intubation was therefore performed using a size-8 tube which was tied-in with ribbon gauze across the lower lip. A palpable pulse was restored after the administration of intravenous adrenaline. On the way to hospital she regained consciousness and removed the endotracheal tube forcibly.

The electrocardiogram on admission (3h after the onset of symptoms) showed sinus rhythm with significant ST elevation across the infero-lateral leads. As part of a randomized trial of thrombolytic therapy she was given 30 units of anistreplase intravenously over 5 min, 162.5 mg aspirin orally and, 6 h later, 12500 units of calcium heparin subcutaneously.

A large lower lip haematoma and extensive bruising was noted 10h after the thrombolytic treatment (see Fig. 1a). No further heparin or aspirin were administered.

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Subcutaneous bleeding after CPR

Fig. 1  (a) Lower lip haematoma, (b) Subcutaneous bruising. Two days after admission.
and 2 units of fresh frozen plasma were infused to correct clotting abnormalities. The haemoglobin concentration fell by 5 g/dl over the next 36 h with concomitant reticulocytosis and thrombocytosis. She developed left ventricular failure, requiring diuretic therapy and the cautious transfusion of 3 units of packed red blood cells.

An echocardiogram revealed reduced posterior and lateral left ventricular wall movement. The lip haematoma and chest bruising had largely resolved at the time of discharge.

DISCUSSION

Thrombolytic therapy is recognized as an effective way of reducing mortality in acute myocardial infarction, GISSI study group (1986), ISIS-2 study group (1988), AIMS study group (1990). The risk of significant bleeding is small and is outweighed by the potential benefit of treatment in the majority of patients, ISIS-2 study group (1988). However, the risk: benefit ratio in patients who have undergone cardiopulmonary resuscitation and who would otherwise be eligible for thrombolytic therapy has not been adequately assessed.

Such patients were specifically excluded in the AIMS study, but not by the GISSI or ISIS-2 investigators. According to the Data Sheets, anistreplase is contraindicated following recent traumatic resuscitation, streptokinase in resuscitation within the previous 10 days and rt-PA in prolonged or traumatic resuscitation.

Analysis of the TAMI trial suggests that resuscitation from cardiac arrest should not be a contraindication to thrombolysis providing the resuscitation efforts were successful within 10 minutes, Califf et al. (1988). However, fatal intrathoracic haemorrhage following treatment with streptokinase has been reported in a patient who had undergone cardiac massage, complicated by rib fractures, though the duration of the resuscitation was not specified, Haugeberg et al. (1989).

There was no evidence of boney injury in our patient but there was still sufficient subcutaneous bleeding to necessitate blood transfusion. The unusual lower lip haematoma resulted, we feel, from the forceful removal of an endotracheal tube.

With increasing numbers of extended-trained ambulance crews and the use of advisory defibrillators there will be greater numbers of patients brought to hospital following successful out-of-hospital resuscitation. There were 180 such admissions to Scottish hospitals between October 1988 and September 1989, Cobbe et al. (1990). Up to half of these patients will have evidence of acute myocardial infarction and admitting doctors will be faced with the decision to give or withhold thrombolytic therapy.

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