Liposuction-induced fat embolism syndrome

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DESCRIPTION

Three days after undergoing an elective liposuction procedure, a 60-year-old woman presented to her local emergency department with shortness of breath and lethargy.

Physical examination was remarkable for abdominal distention, bilateral lower extremity swelling and hypoxaemia. Bilevel positive airway pressure (BiPAP) trial was initiated but it was unable to sustain adequate oxygen saturation; consequently, the patient was intubated and mechanically ventilated. Pulmonary thromboembolism was suspected, but a chest CT scan was contraindicated due to acutely poor kidney function. Therefore, heparin infusion was introduced, but the patient further deteriorated and expired shortly thereafter.

Medical autopsy was conducted to determine the cause of death. Gross findings were significant for acute pulmonary thromboemboli of the segmental and subsegmental arteries of the bilateral lungs and pulmonary lobar consolidation. Surprisingly, brain sectioning revealed diffuse, petechial haemorrhages of the white matter of the cerebral cortex, cerebellum and spinal cord (figure 1).

Microscopic findings on formalin-fixed, paraffin-embedded tissue stained with haematoxylin and eosin further supported acute pulmonary thromboemboli and acute bronchopneumonia. In addition, microscopic brain findings were significant for diffuse petechial haemorrhage of white matter, and cerebral vascular occlusion by fibrin and adipocytes. Suspicion for systemic fat emboli was raised, so osmium tetroxide staining was performed on

Figure 2 Osmium tetroxide stained fat embolus of pulmonary vasculature (haematoxylin and eosin stain, original magnification $\times 40$).

lung sections, which highlighted extensive involvement of fat emboli (figure 2).

Liposuction is regarded as a safe procedure with few risks, and the number of procedures have increased by 124% since 1997 when plastic surgery statistics were first recorded.¹ To the best of our knowledge, this is only the 16th case of liposuction-induced fat embolism syndrome.

Learning points

- ▶ This study represents only the 16th case of liposuction-induced fat embolism syndrome.
- ▶ Liposuction is not a risk-free procedure and potentially fatal complications may occur.
- ▶ Detailed clinical history and astute clinical suspicion are necessary for recognition of postmortem fat embolism, because fat emboli are difficult to identify with routine tissue processing and staining.

Contributors CAC and ENP were involved in the clinical care of the patient. Each contributed towards the collection of relevant data and images, drafting of the manuscript and revision of the paper.

Competing interests None declared.

Patient consent Consent obtained from next of kin.

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Figure 1 White matter petechial haemorrhages of the cerebral cortex.

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