Developmental outcome at 15 months

Development	Severe morbidity (n=26)	No severe morbidity (n=31)	Total (n=57)
Normal:			
Birth weight <1000 g	1	2	3
Birth weight 1000—1499 g	19	22	41
Abnormal (birth weight <1000 g)	2	2	4
Doubtful (birth weight 1000—1499 g)	4	5	9

intraventricular haemorrhage. To determine whether there is a relation between subsequent morbidity and neonatal problems, therefore, only those infants who had developed normally and weighed between 1000 g and 1499 g at birth (41) were reviewed. There was no significant difference in mean birthweight or duration of gestation between those with (19) and those without (22) severe morbidity, but duration of stay ($p<0·01$), duration of continuous positive airways pressure or intermittent positive pressure ventilation ($p<0·05$), incidence of intraventricular haemorrhage ($p<0·02$), cyanotic attacks ($p<0·02$), and major secondary sepsis ($p<0·01$) were all increased in the babies who developed severe morbidity.

Comment

Follow up studies of very low birthweight infants have concentrated on mortality and handicap. Our study showed that 45% of normally developed infants had serious and repeated illnesses in the first 15 months of life. These high levels of morbidity, with their resulting financial cost to the health service and psychological costs to the families, must be considered in any long term evaluation of neonatal intensive care.

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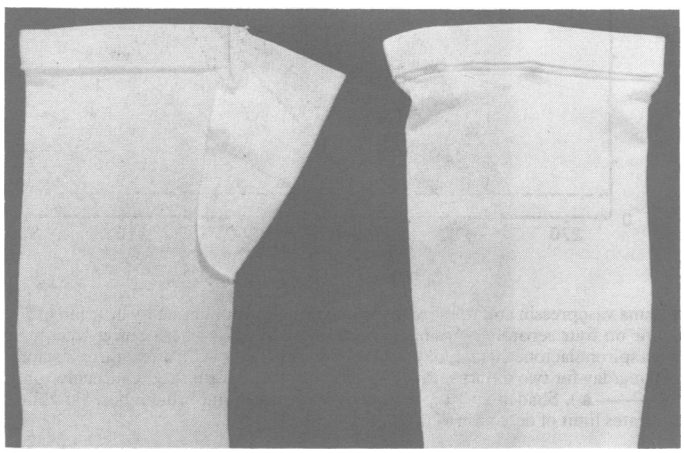
Arterial thrombosis associated with graduated pressure antiembolic stockings

Graduated compression stockings are widely used as prophylaxis against thromboembolic disease. We report two cases of arterial thrombosis associated with their use.

Case reports

Case 1—A 56 year old labourer was admitted for a routine right total hip replacement. Preoperative assessment showed normal peripheral pulses and no contraindication to fitting graduated compression stockings, which he wore continuously from that time. On the tenth postoperative day he complained of pain, numbness, and weakness in his left foot. Examination showed it to be ischaemic with no pulses and a tight constriction band just above the ankle. This coincided with the level to which he had rolled the stockings down the night before. No cause of arterial embolism could be found. Although the stockings were removed, the ischaemic changes spread proximally. He therefore underwent exploration of the femoral artery, at which a long thrombus was removed. Afterwards the hallux remained ischaemic and subsequently autoamputated.

Case 2—A 78 year old woman with severe rheumatoid arthritis was admitted for left total knee replacement. Preoperative assessment showed normal peripheral pulses and no contraindications to fitting compression stockings, which she wore from that time. One week postoperatively she was referred with a small bowel obstruction, for which she had a laparotomy. Ten centimetres of small bowel containing a perforation of unknown cause was resected and an associated abscess drained. On the day after surgery she complained of a cold, painful, numb right leg. Examination showed considerable oedema of both legs with pitting sacral oedema. A tight constriction band coincided with the stocking top around her upper thigh, and her leg was ischaemic distally. No pulses were palpable below the femoral pulse and no cause of arterial embolism was found. The femoral artery was explored and an 85 cm thrombus removed. Her leg recovered fully, although she later died from an unrelated cause.



Stockings with and without gusset.

Comment

Both patients were in sinus rhythm, serial electrocardiograms and cardiac enzyme activities were normal, and neither patient had an abdominal aortic aneurysm. Although arterial embolisation cannot be absolutely excluded, we believe that the diagnosis was arterial thrombosis secondary to a tourniquet effect exerted by the stockings. We cannot find any previous reports of this complication.

In case 1 the occlusion was caused by the additive pressure from the multiple layers of stocking. In case 2 it was partially due to swelling of the leg associated with heart failure, hypoalbuminaemia, and constriction of the venous return, but we believe that the design of the stocking was also an important contributory factor. The circumferential band around the top lacked the elasticity necessary to prevent a tourniquet effect. The manufacturers of some stockings have overcome this problem by incorporating a piece of elasticated material into the stocking top, which lies over the femoral triangle when the stocking is fitted. They claim that if the thigh swells the gusset gives and prevents undue pressure over the femoral artery and vein.

Manufacturers' recommendations on the use of compression stockings include checking their fitting at least daily and not rolling them down We would also suggest that alternative forms of antiembolic prophylaxis be used when the patient is unable to understand or comply with instructions (case 1). The indications for using stockings should be reviewed daily and the stockings discarded when no longer needed.

These cases show the need to carry out the manufacturers' instructions scrupulously. The second case also suggests that a gusset may be a useful safety feature.

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