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(Accepted 5 August 1981)

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Significance of early postoperative fever in children

Fever is one of the earliest recorded signs of illness and has been a traditional observation in nursing care for centuries. A small rise in body temperature after operation is a well-recognised phenomenon, particularly in children, but its frequency and implication for care have never been assessed.

Patients, methods, and results

We studied 150 consecutive children (16 girls, 134 boys) undergoing operation for inguinal hernia. Three boys were also circumscised and two children underwent bilateral herniotomy. Age range was 4 months to 11 years (mean age 3.7 years). The procedure was planned on a day-case basis in all but 32 cases, and operations were performed by several different surgeons. All children were admitted on the morning of operation and recovered during the afternoon. During this period routine postoperative nursing observations were made, including at least two temperature recordings. The children were later seen by a doctor and allowed home at around 6 pm if their condition was found to be satisfactory; if it was not they remained in hospital. Children were visited several times at home by the district nurse and reviewed in hospital at one month by the medical staff.

Body temperature above 37°C was often recorded, and the table shows a relation between temperature reached and age. The incidence of fever over 37.5°C fell from 74% in those aged under 1 year to 28% in those over 4 years.

Proportion of children with fever after operation

	Fever (°C)		
	37-	37.5-	≥38
No (%) of children with fever within 24 hours	83 (55)	71 (47)	33 (22)
No (%) of children with fever at 6 pm	66 (44)	56 (37)	32 (21)
Average age (years)	3.1	2.9	1.9

Of 70 children with a temperature of over 37.5°C, 52 were essentially well, six vomited transiently, and 12 developed complications possibly associated with fever (haematoma or infections). Two children without fever developed similar complications. All of the complications were apparent clinically, sometimes after discharge.

Of the 118 children for whom day-case treatment had been planned, 48 were detained overnight. In 28 cases this was solely because fever had been recorded; a similar number, however, were discharged despite fever. None of these was unwell. Nine of those detained stayed two or more days on account of unexplained fever. Pain, vomiting, or social reasons accounted for the remaining 20 who stayed overnight.

Comment

Temperatures over 37°C are conventionally considered to be abnormal. If only temperatures over 37.5°C are considered, however, 70 (47%) of the 150 children studied were febrile within the first 24 hours. Interestingly, 12 of the 14 children who subsequently developed complications were from this febrile group. Complications were always apparent on clinical grounds, and decisions about management and discharge from hospital were never beneficially influenced by knowledge of the child's temperature. There therefore seems little useful predictive value in knowledge of fever in such cases.

The mechanism of the early postoperative rise in body temperature is not clear. A simple infective basis does not explain the relation above. There was no relation to postoperative chest infection. Excessive administration of atropine may result in fever,¹ but there was no relation here to atropine dosage or other premedication. Hyperpyrexia occurring during anaesthesia is probably a completely different phenomenon,² and no relation was noted here to the type of anaesthetic agent used. We suggest that the phenomenon may be a central response to the stress of surgery, entailing a transient adjustment of "set point" for temperature homeostasis as occurs under other circumstances such as exercise.³ This would explain its lack of serious implication. Furthermore, the strong inverse relation to age suggests that it is a relatively primitive response. Whether the mechanism is reabsorption of blood (analogous to fracture fever) or other consequences of trauma inflicted remains speculative.

These observations have important implications for the management of operations done on a day-case basis. Even when only the temperature recorded at 6 pm (the usual time of discharge) was considered, one-third of the patients were febrile (>37.5°C). We suggest that temperature is of poor predictive value and may lead to unnecessary admission to hospital. It seems wiser in this type of operation to avoid measuring children's temperatures.

¹ Collins VJ. *Principles of anaesthesia*. Philadelphia: Lea and Febiger, 1976:1248.

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(Accepted 28 August 1981)

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Facial burns due to fan heater

Facial heat injuries in toddlers are usually due to scalds. We describe a facial burn due to a fan heater, widely considered to be incapable of causing such injury.

Facial appearance of child 12 hours after injury.

Case report

A 10-month-old West Indian girl who had been crawling for one month was left unattended on the floor with a 3-kW electric fan heater switched to maximum. She was discovered minutes later to have fallen over the front