For Debate . . .

The choking child: back bangers against front pushers

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One of the most frightening experiences of my life happened when our elder son was 3 years old. One morning my wife called me urgently into his bedroom, where I found him deeply cyanosed and making ineffectual respiratory efforts. Some older visiting children had given him a "gob stopper." With thoughts racing through my mind of where in the house would I find a knife sharp enough to attempt emergency tracheostomy, I turned him upside down over my knee and banged his back with the side of my fist several times. Never have I been more relieved than when I saw that sweet roll across the bedroom floor. That is my sole experience of managing this emergency, and until recently I was unaware of the controversy that has raged about its correct management since Heimlich described his method of abdominal compression.¹ Discussion with colleagues suggests that this ignorance is widespread.

Importance of problem

The problem is important. In 1978 in the United States 450 children died of foreign body airway obstruction. In 1980 in England and Wales the total number of deaths at all ages from aspiration of foreign bodies was 537 and for children under 15 years it was 102, of whom 100 were under 5 years.²

The July 1982 issue of *Pediatrics* contains three articles on the emergency treatment of the choking child.³⁻⁵ The first of these is a further explanation and defence of the principles of treatment suggested by the Committee on Accident and Poison Prevention of the American Academy of Pediatrics,⁶ which recommended a series of four blows on the back followed if necessary by compression of the chest, delivered in the same manner as for external cardiac massage. The second article⁴ attempts to measure the inertial and aerodynamic forces produced by blows on the back and by rapid abdominal compression, and in the third article, which would be even more convincing were it less polemic, Heimlich⁵ presents his argument for omitting blows on the back and relying solely on abdominal compression.

Heimlich manoeuvre

The case for the Heimlich manoeuvre (rapid upper abdominal compression delivered either from behind in bear hug fashion or with the patient supine by pressure with the heel of the hand,

or in an infant with two or three fingers) seems strong, although some of the evidence presented by its proponents has been less than scrupulously assessed. (Heimlich, for instance, quotes Cantrell *et al.*,⁶ who claimed that deaths from choking on food in the United States fell from 1.1 per 100 000 population in 1973 to 1.0 per 100 000 in 1976 "at least in part due to the technique described by Heimlich" (in 1974), though they also present data showing that the rate was 1.0 in 1970, 1.1 in 1960, and 0.7 in 1950.) Heimlich claims that the introduction of his manoeuvre has resulted in an appreciable fall in the number of deaths from choking in several American States.⁵

Measurements show that abdominal thrust generates much greater and more prolonged airway pressure than does slapping the back. Using an accelerometer, Day and colleagues showed that slaps on the back would tend to move the larynx upwards (towards the head) and cause a foreign body to move downwards.⁴ Gordon and colleagues,⁷ working on anaesthetised baboons, concluded that slaps on the back would displace a foreign body, making subsequent abdominal thrust more effective, but Heimlich argues that the use of anaesthesia, by eliminating spasm of the throat muscles, invalidates this experiment as a guide to emergency practice.

Heimlich claims that slapping the back is highly dangerous—"back blows are death blows"—but both the Committee on Accident and Poison Prevention of the American Academy of Pediatrics and the British first aid associations⁸ still recommend blows on the back as the first action. If these blows fail to relieve the obstruction the next step, according to the Committee on Accident and Poison Prevention of the American Academy of Pediatrics, is compression of the chest and, according to the British associations, upper abdominal compression. The Americans recommend compression of the chest rather than of the abdomen because of the danger to abdominal viscera with the latter, but Heimlich makes out a convincing case for the greater danger of compressing the chest.

Confusing recommendations

What should we advise parents and others to do when faced with a choking child? I am not expert or foolhardy enough to try to decide the issue. Might not much depend on the nature of the foreign body? In my experience it was a large, hard, fairly heavy object that could only have been supraglottic and came out with the aid of gravity and a blow on the back. A smaller object may have been infraglottic and turning the child upside down might have caused it to impact against the inferior surface of the vocal cords.⁵ In that case the Heimlich manoeuvre would seem to be the only way, short of surgery, to clear the airway. All agree that digital removal of a foreign body from a child's throat should be attempted only when it can be seen, and blind sweeping with a finger is likely to be lethal.

The present variety of recommendations is confusing, and

this article is written not to decide the issue but to bring the controversy to the attention of British doctors and to promote correspondence and discussion.

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USSR Letter

Campaign for sobriety

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In much of the territory that is now the USSR, and in the Russian heartland especially, heavy drinking and alcoholism have been common phenomena for many centuries. With characteristic reticence about social problems, the Soviet government does not publish annual figures for the consumption of alcohol per head of population and so it is not possible to construct a time series for recent decades. Nevertheless, indirect evidence exists to suggest that since the second world war the trendline has been moving upwards—and by no means minimally.

Ambivalence of approach

Although the point cannot be proved from written sources, governmental attitudes towards this trend are bound to be conditioned by awareness that the sales tax on alcoholic beverages represents a major source of revenue for the State budget. In the short term at least, no comparable high yield tax could be found to make good the financial shortfall resulting from a large reduction in purchases of alcohol. As in other countries, that constraint may be posited as one explanation for any half heartedness about campaigns aimed at modifying the behaviour patterns of drinkers.

It is also relevant to mention the divergence of views on how best to approach a highly complex problem which generally does not yield to simple explanations and for which easy solutions are not available. The lack of unanimity was brought into sharp focus recently by an interesting article published in *Literaturnaya Gazeta* under the title "With a clear head."¹ According to the author, D Viktorov, a vast amount of preventive activity has been undertaken during the 10 year period since the Central Committee of the Communist Party and Council of Ministers of the USSR adopted resolutions about intensifying the struggle against drunkenness and alcoholism. (These resolutions were

adopted in June 1972.) Given the labour shortages and low productivity in the Soviet economy, understandably priority has been given to campaigns in the factories and other places of employment where "commissions for the struggle against drunkenness" have been set up and special "narcological rooms" opened for treating addicts on the spot.

Viktorov contrasts such detailed quotidian activity with the impracticality of far more sweeping and essentially mechanistic measures. He criticises examples of these in an article by a certain Dudochkin, whose work signally fails to show that "rigorous analytical approach," without which it is impossible to arrive at "a constructive solution."

A misguided view

Dudochkin is charged with tendentiousness and disregard for accuracy because he gives an inflated figure for the number of people who are taken into the sobering up stations each year. His total (according to Viktorov) exceeds the correct figure by more than three times. Evidence of simplistic thinking is provided by Dudochkin's strictures against wine making enterprises for planning almost to double their output of table wines in the near future. In fact, these increased production targets are a response to the official strategy aimed at altering the "mix" of beverages so that the share of strong alcohol such as vodka declines as a percentage of total consumption.

Dudochkin also betrays an obscurantist attitude towards treatment by his use of a quotation from a reader's letter. This lays down the following hard line: "In recent times an unfounded opinion has become widespread that drunkards are sick people and it is said that we must relate to them as to sick people who require treatment. Those who are sick are only few, and the remainder have let themselves go; they are criminals and we ought to deal with them as criminals."

A related theme in the article under attack is the naive assumption that drunkenness may be prevented by a "dry law." By way of contradiction, Viktorov first refers to the lesson of the year 1923, when the Soviet food industry was embryonic, strict rationing applied, and no vodka was produced by recog-

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