We are grateful to Dr D Scott for information on the histology in Case 2.

References

- ¹ Kay R, Brereton RJ, Johnston JH. Urinary ascites in the newborn. *Br J Urol* 1980;**52**:451-4.
- ² Gandhi RK. Spontaneous rupture of the bladder in the newborn. *J Postgrad Med* 1964;**10**:15-7.
- ³ McDonald J, Murphy AV. Neonatal ascites from spontaneous rupture of the bladder. *Arch Dis Child* 1975;**50**:956-8.
- ⁴ Griscom NT, Colodry AH, Rosenberg HK, Fliegel CP, Hardy BE. Diagnostic aspects of neonatal ascites: report of 27 cases. *AJR* 1977;**128**:961-70.
- ⁵ Murphy D, Simmons M, Guiney EJ. Neonatal urinary ascites in the absence of urinary tract obstruction. *J Pediatr Surg* 1978;**13**:529-31.

Correspondence to Dr P Morrell, Middlesbrough General Hospital, Middlesbrough, Cleveland.

Received 18 February 1985

Passenger safety in cars

S J SPRIGG

Accident and Emergency Department, Children's Hospital, Sheffield

SUMMARY Comparison of child passengers between January 1983 and 1984 showed an increased use of rear safety restraints after the wearing of front seat belts became mandatory. In 1984, however, only 25% of children were restrained, most commonly in a safety seat.

Method

During one week in January 1983 and a corresponding week in 1984, parents arriving at the casualty department with their children completed a questionnaire about travel safety in their family car. Details were obtained about the use of safety restraints relating to: the age and number of children per family, their usual seating arrangements, the use of safety locks on rear car doors, the types of safety restraints possessed, the problems of installing and using them, and any changes following the act enforcing wearing of front seat belts after January 31 1983.

Results

In Sheffield the equivalent of one in four children attend a casualty department each year with medical, surgical, or traumatic problems, and 70% of families possess cars. In the 1983 survey 325 families (709 children) completed the questionnaire compared with 337 families (743 children) in 1984. An increased number of families possessed car safety restraints in 1984 (114 out of 337 (34%)) compared with 1983 (86 out of 325 (27%)) ($P < 0.05$, χ^2).

In 114 families using restraints in 1984, only 76 restrained *all* children—only 201 restraints were available for 237 children. There were 16 redundant

restraints which children had outgrown, for example carrycot straps or rear seat belts inappropriate for the toddler. Thus 185 out of 743 children (25%) were potentially restrained, based on parental reporting. In the remaining 38 families the young children were preferentially restrained.

Ninety seven of the 114 parents (85%) used the restraints regularly—only four expressed difficulties sufficient to abandon using these, for example the toddler undoing the buckle or restriction of his visual field and movement.¹ The commonest restraint in use was the safety seat (age 9 months to 4 years; weight 9 to 18 kg.) (Table 1).

In 1983 child proof rear door safety catches were used by 39 out of 60 families (65%) who had four door cars and children already restrained, compared with only 82 out of 169 families (48%) whose children lacked restraints ($P < 0.05$, χ^2). Fifty five of the 142 (39%) children aged under 5 years were unrestrained in the rear of the car.

In the 1984 survey the larger families used restraints less frequently—44% of 64 single child families were restrained, 28% of 168 two child families, and 11% of 25 families with more than three children used restraints. The older the child the less rear restraints were used (Table 2).

Table 1 *Type of restraint and number potentially in use by 114 families consisting of 237 children (January 1984)*

Type of restraint	No
Carrycot straps	2
Child Safety Seat	65
Child Safety Harness	47
Rear Generation Belt (adjustable for child or adult)	20
Rear Adult Belt and Booster Cushion	13
Rear Adult Belt	38
Total number of restraints	185

Table 2 Percentage of 743 children with restraints in the rear car seat in relation to age (January 1984)

Age group (years)	No	Percentage restrained in each age group
< 5	153	58
5-< 10	199	25
10-< 15	303	13
≥ 15	88	9

In 1983, 67% of 239 and in 1984 62% of 233 parents who did not possess restraints claimed they had never considered the subject. Expense was the main inhibitory factor for the remainder.

Information about safety restraints came from friends, relatives, magazines or the media—a trend documented in 1977.² Several parents mentioned their health visitor, but only one mentioned advice from the antenatal class. Once parents selected a restraint it was very easy to obtain, but 19% of the 114 using restraints experienced installation difficulties, especially drilling mounting holes in older cars. In hatchback/estate cars the purchase and fitting of a space-saver bar was an additional problem.

Discussion

Accidents are now an important cause of childhood mortality and morbidity and the unrestrained child passenger is particularly vulnerable. Accurate mortality and morbidity statistics for children passengers are difficult to obtain, and non-fatal accidents are grossly under reported. Thus the effect of a safety campaign may be difficult to quantify, except as an increased number of restraints in use.

Parents who wear seat belts themselves are most likely to have child restraints.³ The increased number of families possessing restraints in the 1984 survey may be a consequence of front seat belt legislation in Britain. Parents lacking child restraints were those least likely to use rear door locks—a simple measure without expense. In these surveys, and others,⁴ some parents who restrained infants did not use restraints when their child was older. In larger families the youngest child was preferentially restrained, and reasons for not using the restraint subsequently included inconvenience, child resistance, expense, and difficulty in installing anchorage systems. Manufacturers must acknowledge these

last two factors,¹ and cars manufactured since October 1981 have rear anchorage points installed. Some parents suggested that all manufacturers install rear seat belts, and Parliament has debated the appropriate legislation.

Legislation and health education are the main methods of increasing child passenger safety. Bergman⁵ suggested legislation had the greater potential, the value of health education being questioned by many.^{2 5 6} Pless,⁶ however, encouraged doctors to join in multidisciplinary teamwork. In 1980 the American Academy of Pediatrics launched 'The First Ride—a Safe Ride' campaign to encourage use of restraints on the neonate's journey home from hospital, and in 1983 extended it to older children—'Every Ride—a Safe Ride'.

To ensure that all children in cars are adequately protected:

- (1) There should be legislation to provide rear seat belts and enforce their use.
- (2) Antenatal health education about infant travel safety should be provided.
- (3) Parents should be required to seat children in the car rear, to use rear door safety locks, and encourage correct child restraint usage throughout childhood.

The next generation should then automatically ensure safety of their offspring in cars.

I thank Professor R S Illingworth and Dr C M Illingworth for their encouragement and advice, Janet Gyte for statistical help, and Ann Gillingham for secretarial assistance.

References

- ¹ Avery JG. The safety of children in cars. *Practitioner* 1980;**224**:816–21.
- ² Simons PS. Failure of pediatricians to provide automobile restraint information to parents. *Pediatrics* 1977;**60**:646–8.
- ³ Neumann CG, Neumann AK, Cockrell ME. Factors associated with child use of automobile restraining devices. *Am J Dis Child* 1974;**128**:469–74.
- ⁴ Williams AF. Observed child restraint use in automobiles. *Am J Dis Child* 1976;**130**:1311–7.
- ⁵ Bergman A. Use of education in preventing injuries. *Pediatr Clin North Am* 1982;**29**:331–8.
- ⁶ Pless IB. Accident prevention and health education: back to the drawing board. *Pediatrics* 1978;**62**:431–5.

Correspondence to Dr S J Sprigg, 3 Kingsley Park Avenue, Sheffield S7 2HG.

Received 21 February 1985