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RISK FACTORS FOR ANAL SPHINCTER INJURY IN TRENT – PREVENTION IS BETTER THAN CURE?

Hypothesis / aims of study

Anal incontinence is serious and debilitating symptom. It is often under reported due to embarrassment and the social stigma associated with the condition[1]. In women it is mainly due to obstetric anal sphincter injury. Primary repair of anal sphincter injury is associated with poor surgical outcomes with 85% having sonographic defects within three months of repair[2]. In addition 40% suffer anal incontinence after primary repair.
Aim: To determine risk factors for anal sphincter injury in the British Midlands.

Study design, materials and methods

A systematic review of all women delivering at a large teaching hospital in Trent over a three year period (2001 – 2003). Obstetric variables of women delivering were collated from the hospital database and analysed to discern risk factors for anal sphincter injury.

Results

Eight thousand three hundred and five women had vaginal deliveries over the three year period, and 98(1.2%) sustained anal sphincter injuries. Analysis of the risk factors is shown in Table 1.

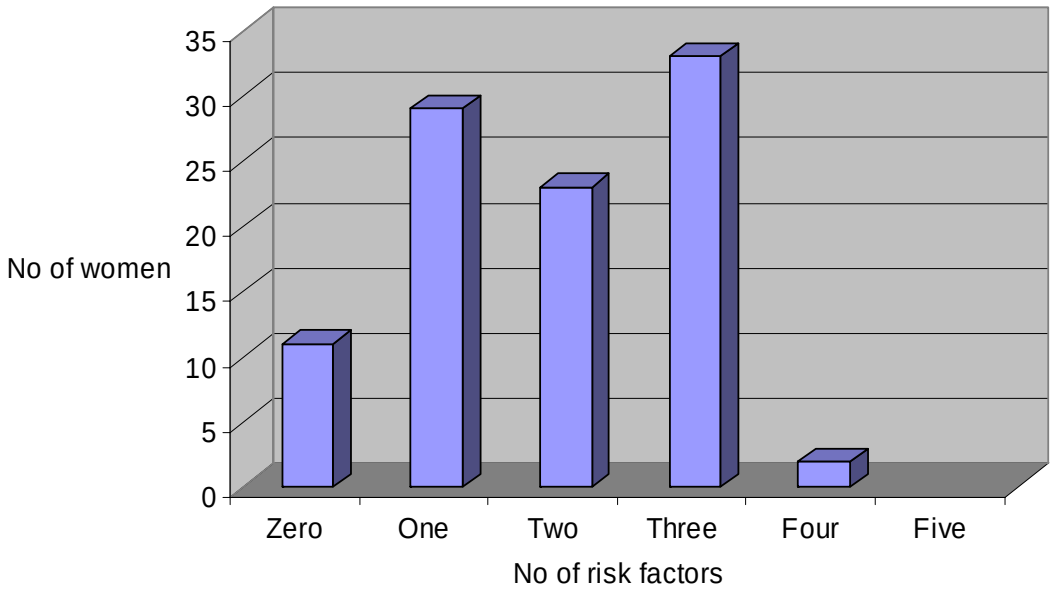
Table 1 Risk factors for anal sphincter injury

	Anal sphincter injury n=98	No anal sphincter injury n = 8305	P value
Instrumental delivery[a] (%)	54 (55.1)	1529 (18.6)	0.000
Kielland forceps[a] (%)	2 (2.5)	69 (1)	0.029
Neville Barnes forceps[a] (%)	27 (28)	427 (6.5)	0.000
Wrigleys forceps[a] (%)	8 (8.2)	66 (0.9)	0.000
Vacuum extraction[a] (%)	17 (17.3)	973 (12.9)	0.001
Episiotomy[a] (%)	48 (49)	1482 (17.8)	0.000
Head circumference[b] (sd)	34.9 (1.4)	34.3 (1.8)	0.001
Primiparae[a] (%)	64 (65.3)	2725 (33.2)	0.000
Birthweight Kg[b] (sd)	3.57 (+/- 0.51)	3.29 (+/- 3.29)	0.000

[a] Analysed by chi square test. [b] Analysed by unpaired student t test

Table 2 shows the number of risk factors each women who sustained an anal sphincter injury had; the risk factors being: birthweight $\geq$ 4.0Kg, vacuum extraction, forceps delivery, episiotomy and primiparae.

Table 2 The number of risk factors for anal sphincter injury



Interpretation of results

We have shown in this large series of women that birthweight, head circumference, episiotomies, instrumental deliveries and nulliparity are significantly associated with anal sphincter injuries in univariate analysis.

In addition more than 60% of women who sustained an anal sphincter injury had multiple risk factors which should make the accoucher aware of the potential for sphincter injury.

Concluding message

The risk factors for anal sphincter injury are well known and have been reiterated in this series of women. Research is needed to determine ways of protecting the anal sphincter at delivery and thus minimise morbidity associated with childbirth.

References

1. Third degree obstetric anal sphincter tears: risk factors and outcome of primary repair. BMJ 1994; 308:887-91.
2. Management of obstetric anal sphincter injury: A systematic review and national practice survey. *BMC Health Services Research* 2002; 2:9