

Factors Influencing Mode of Birth in Women With Previous Obstetric Anal Sphincter Injury (OASI)

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Background:

The incidence of obstetric anal sphincter injury (OASI) during vaginal birth is 2.9%¹. A significant number of women go on to have further pregnancies and there is lack of sufficient evidence to suggest best method of birth following an OASI. The rate of recurrent OASI is 5-7% and up to 17% women develop worsening faecal symptoms after a subsequent vaginal birth¹. The RCOG guidelines recommend discussion about mode of birth, including caesarean section with all women who have sustained an OASI, particularly if symptomatic or abnormal endo-anal ultrasound (EAUS) findings. There is evidence that, in the absence of a defect on EAUS, further vaginal birth does not cause deterioration in anal sphincter function². Evidence suggests risk factors for a recurrent OASI are similar to that of a primary OASI (birth weight >4kg, instrumental birth)³. Multiple factors may inform a woman's choice for mode of delivery. We aim to assess the factors influencing maternal choice of mode of delivery.

Objectives:

To establish factors influencing mode of birth in women with a previous obstetric anal sphincter injury (OASI).

Method:

Retrospective analysis of case notes of all births between September 1st 2020 and August 31st 2021 with history of an OASI in a previous birth was undertaken. Bowel symptoms, EAUS findings and any documentation of reasons for choice of mode of birth were reviewed followed by outcomes.

Results:

98 women had a birth after a previous OASI in the specified time period. The majority (49% n=48) had a 3A tear, 30.6% (n=30) 3B, 15.3% (n=15) 3C and 5.1% (n=5) grade 4 tear (see figure 1).

Follow-up: 70.4% (n=69) attended a dedicated OASI follow-up clinic. 33.7% (n=33) reported following symptoms; urgency (61.3%, n=19), poor control of flatus (48.4%, n=15), sensation of incomplete evacuation (38.7%, n=12) and 12.9% (n=4) reported episodes of bowel incontinence (see figure 2).

Figure 1. Degree of OASI in previous delivery

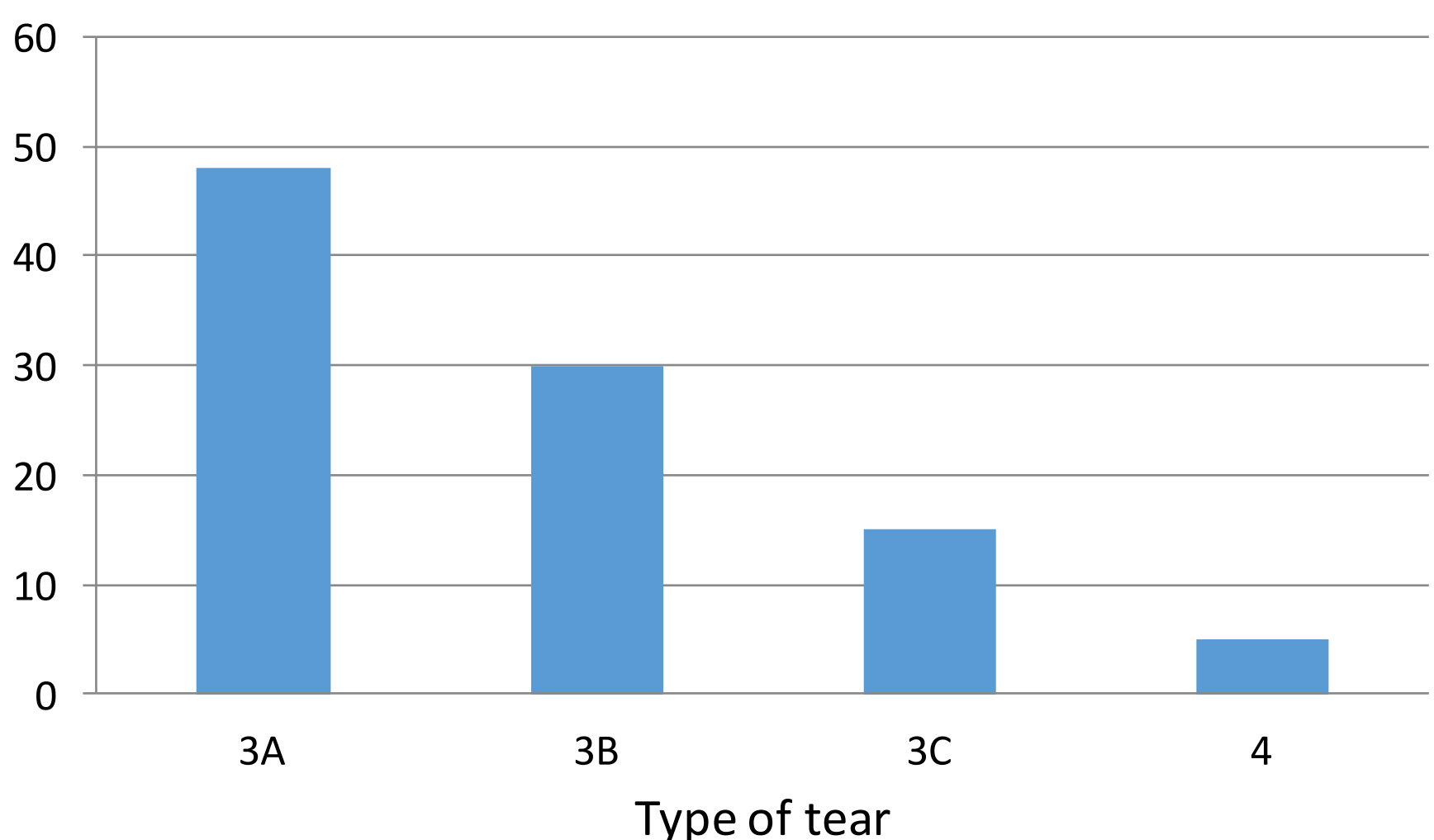


Figure 2. Symptoms reported at follow-up

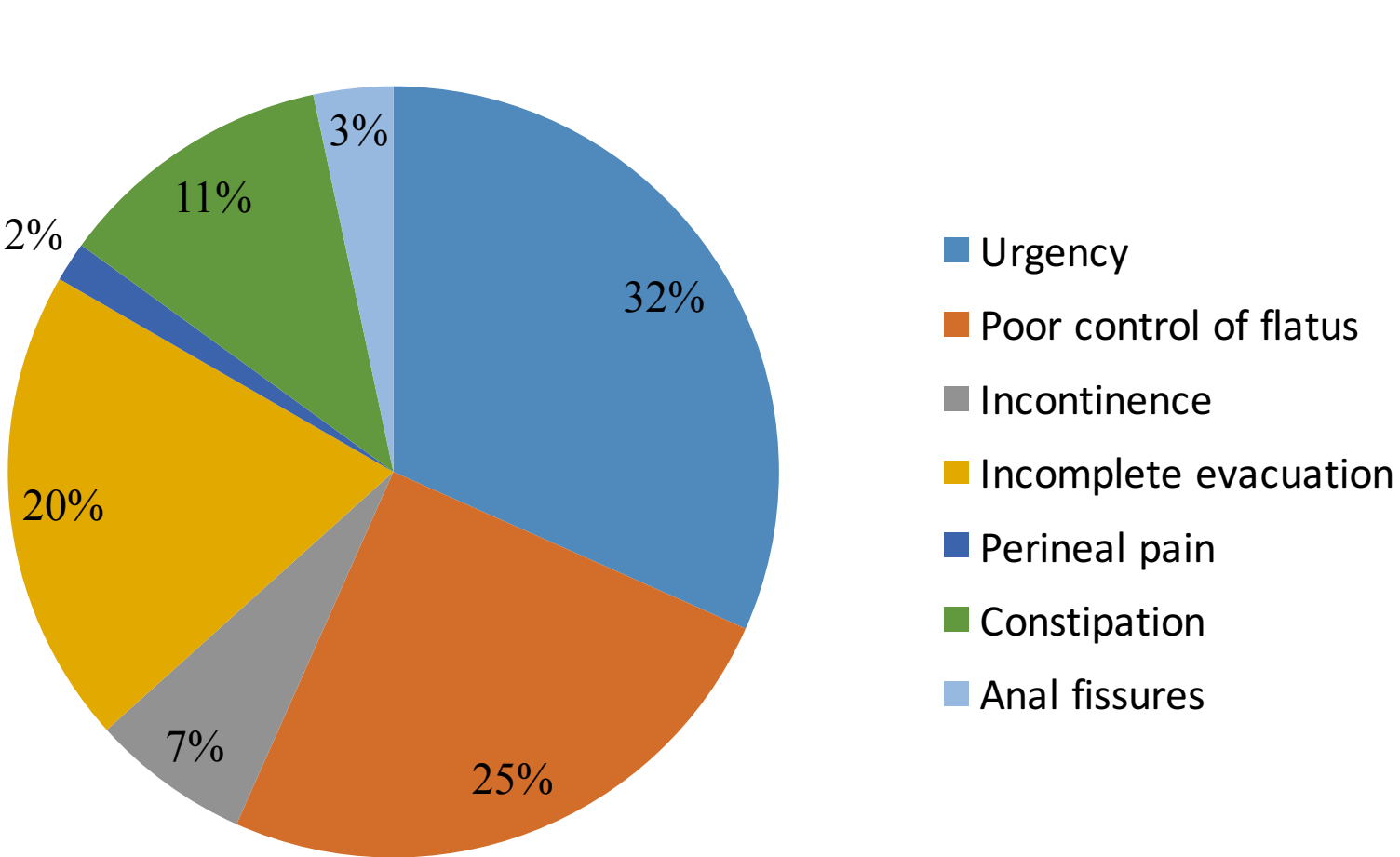


Table 1. Planned mode of delivery by symptoms

	Yes	No	Unknown (DNA)
Planned CS	19	21	8
Planned NVD	14	26	10

Table 2. Mode of delivery by planned mode of delivery

Planned	Actual				
		NVD	ELCS	EMCS	Instrumental
	NVD	42	1	4	3
	ELCS	0	42	6	0

Figure 3. Endo-Anal ultrasound findings

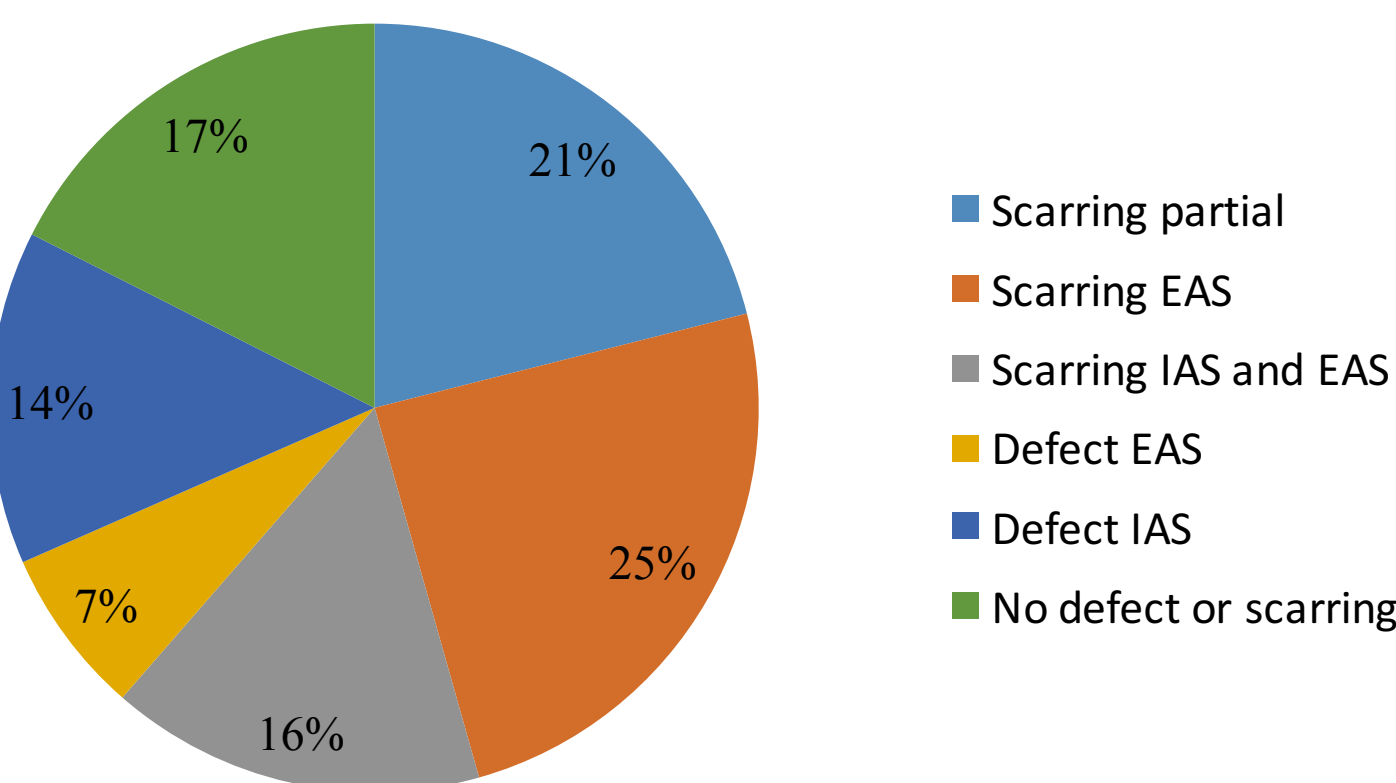
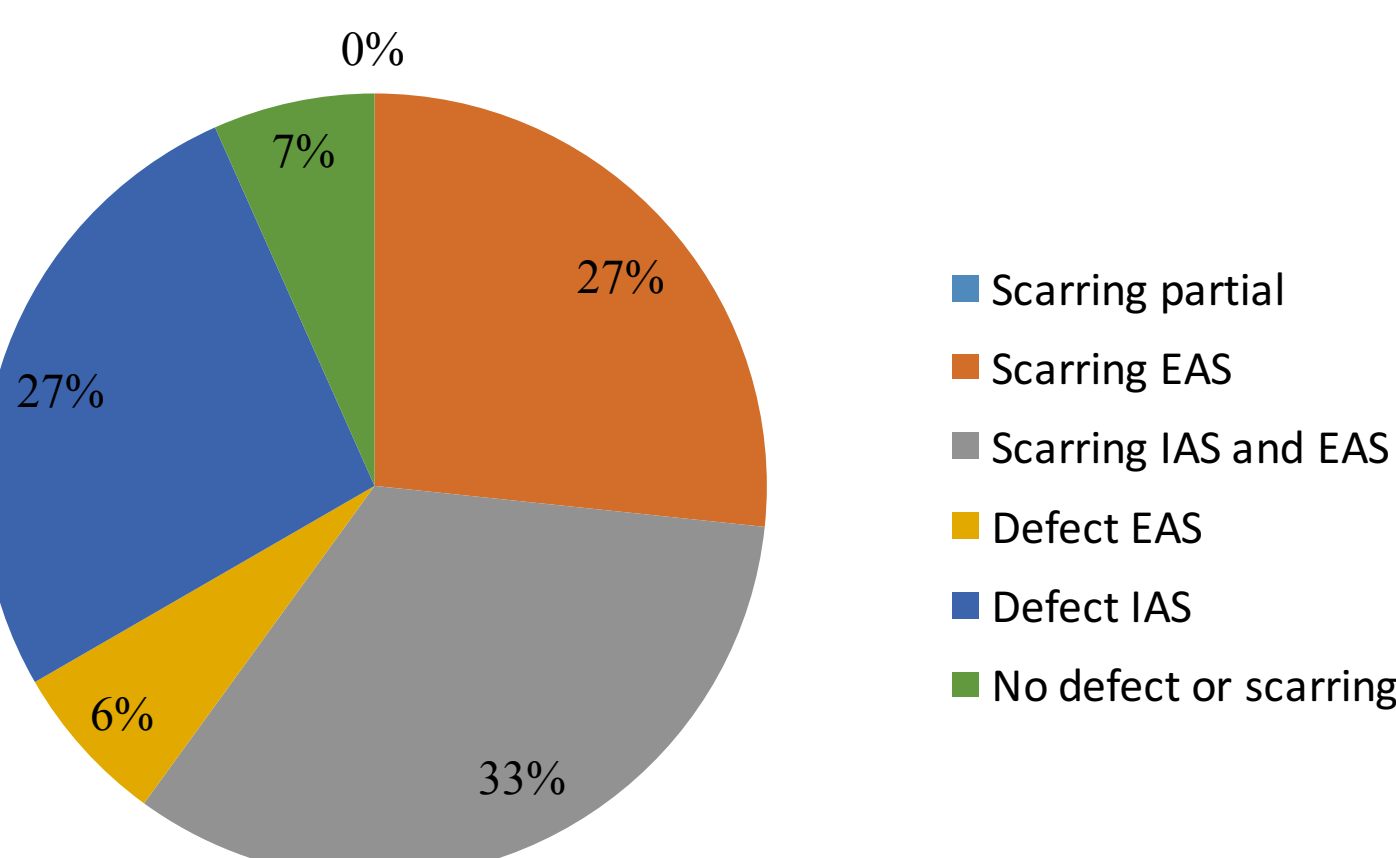


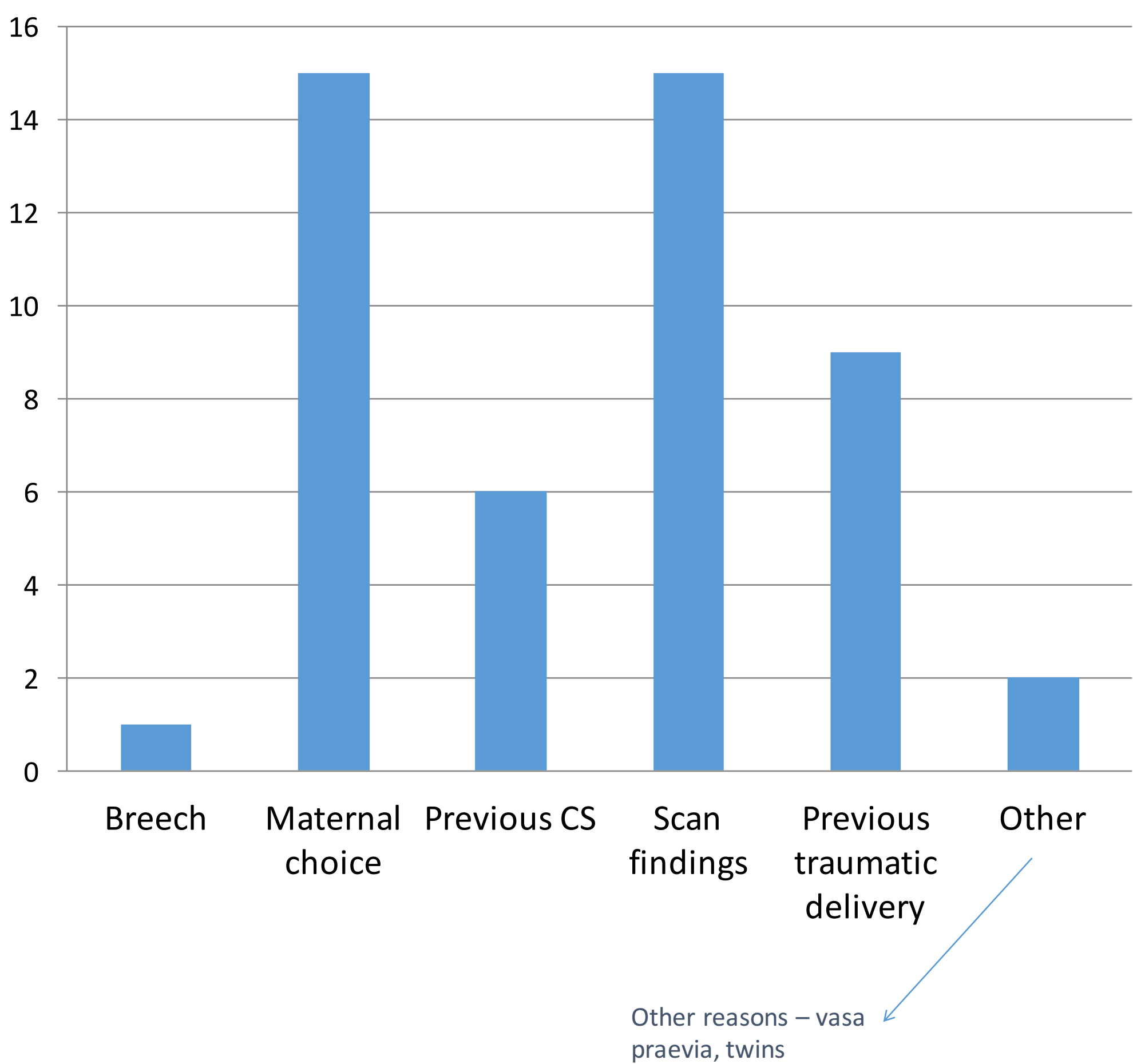
Figure 4. Endo-Anal ultrasound findings following 3c/4th degree tear



58.2% (n=57) underwent an EAUS including 75% (n=15) of women with internal anal sphincter (IAS) injury. 75.8% (n=25) symptomatic women had an EAUS. Figure 3 shows the EAUS findings: 45.6% (n=26) had partial or full-thickness scarring in the external anal sphincter (EAS) on EAUS. 21.1% (n=12) had a defect in either the EAS or IAS and 17.5% (n=10) had no defect or fibrosis. 33% (n=15) patient with a 3c or 4th degree tear had a defect of the EAS and/or the IAS demonstrated on EAUS (see figure 4). The most common site of defect noted was the distal or proximal-mid zone of the IAS. The majority of defects were 1-2 'hours' wide (n=6), however a significant number (n=5) were more than 2 'hours' wide.

Mode of birth in current pregnancy: 51% (n=50) planned to have a vaginal birth and 49% (n=48) requested an ELCS. Reasons for ELCS are shown in figure 5: EAUS findings (31.3% n=15), previous traumatic delivery (18.8% n=9), symptoms despite normal scan (10.4% n=5), maternal choice (20.8% n=10) and other obstetric indications (6.3% n=2). Table 1 shows how symptoms affected planned mode of delivery. In women without significant symptoms and evidence of well healed AS on EAUS (n=82), 40.2% (n=33) chose an ELCS and 59.8% (n=49) preferred a vaginal delivery. 90% (n=18) women who sustained an IAS injury opted for ELCS compared with 33.3% of women with previous 3A tear. 18 women did not attend follow-up so it was not possible to determine their symptoms. 90% (n=45) women planning a vaginal delivery had a spontaneous vaginal birth or assisted birth with 10% (n=5) having an emergency CS (EMCS) (see table 2). Table 3 shows degree of perineal trauma following subsequent vaginal birth. Recurrence of OASI was 7.2% (n=6); 33.3% (n=2) had an instrumental birth, with no evidence of other risk factors.

Reason for ELCS in subsequent pregnancy



Conclusions:

Bowel symptoms, previous birth experience and scan findings demonstrating defect or extensive scarring were the main factors influencing choice of mode of birth in women with previous OASI. Involvement of IAS significantly increased the likelihood of choosing ELCS. Recurrence rates of OASI are consistent with existing data and more likely with an instrumental birth¹. Next we plan to evaluate the changes in bowel symptoms and satisfaction after birth in these groups of women.

Table 3. Degree of perineal tear following vaginal birth

	None	Grade 1	Grade 2	Grade 3A	Grade 3B	Grade 3C	Grade 4
SVD	5	1	33	3	1	0	0
Ventouse	0	0	0	0	0	1	0
Forceps	0	0	1	1	0	0	0

References

1. RCOG. Management of third and fourth degree perineal tears. 2015. Available from: [Third- and Fourth-degree Perineal Tears, Management \(Green-top Guideline No. 29\) | RCOG](#)
2. Scheer, I. et al. Mode of delivery after previous obstetric anal sphincter injuries (OASIS). Int Urogynaecol J Pelvic Floor Dysfunct. 2009; 20:1095-101.
3. Basham, E. et al. Subsequent pregnancy outcomes after obstetric anal sphincter injuries. Female Pelvic Medicine and Reconstructive Surgery. 2013. 19(6): 328-332.