The final version of this paper was published in the Aust NZ J Obstetrics and Gynaecology 2016; 56:212-214

Prevalence of noncaesarean uterine surgical scars in a maternity population.

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MAIN TEXT

The Robson classification system for caesarean section is a widely accepted, clinically meaningful method of examining caesarean section risk and outcomes.[1] Multiparous women with at least one previous uterine scar and a single cephalic pregnancy ≥37 weeks gestation (Robson Group 5) make the greatest contribution to caesarean section rates.[2, 3] Robson Group 5 is pragmatically considered to be women with a prior caesarean section. However, there is uncertainty whether women with a non-caesarean section uterine scar would impact Robson Group 5, as rates of non- caesarean section uterine scars in the general maternity population are unknown. Furthermore, in the Robson Classification, nulliparous women with a non-caesarean section scar are categorised with other nulliparae although their care may be more similar to multiparae with a caesarean section scar. Therefore, we aimed to determine the overall population prevalence of non- caesarean section uterine scars in a contemporary obstetric population, and for nulliparae the impact on mode of delivery.

We examined all deliveries (N=654,629) in New South Wales from 2005-2011. Birth records were linked longitudinally to maternal hospitalisations up to 11 years prior to the delivery (2000-2011).[4] The exposure of interest was uterine surgery identified by surgical procedure codes in hospital records (Table 1).[5] We found 1,535 women with documented non- caesarean section uterine surgery, who subsequently had 1,951 deliveries (prevalence 3.0/1000 deliveries). Of these, 929 (61%) were nulliparous, with a prevalence of non- caesarean section uterine scar of 3.4/1,000 deliveries among nulliparae. Among multiparae, the prevalence of non- caesarean section uterine scar in isolation (i.e. without a caesarean section scar) was 2.7/1,000.

Among nulliparae, those with a non- caesarean section uterine scar were older (36.3 years old vs 28.8 years old; p<0.001) compared to nulliparae without a scar, with the average age at surgery 33.3±4.8 years and the median surgery-to-birth interval 22 months (IQR: 15-37 months). Myomectomy was the most common non- caesarean section uterine procedure resulting in a scar (86.3% overall and 92.4% among nulliparae respectively), mainly by laparotomy (Table 1). For nulliparae, laparotomy and hysterotomy had higher subsequent caesarean section rates than laparoscopic or hysteroscopic surgery (84.2% vs 64.0%; p<0.0001).

To our knowledge, this is the first report of the population prevalence of women with non- caesarean section uterine scars in an obstetric population. Our study utilised large, linked population health datasets that included one-third of all Australian births and longitudinal record linkage for a minimum of 5 years, allowing ascertainment of documented uterine surgery. Although identification of gynaecological procedures in routinely collected data have not been directly evaluated, surgical procedures are generally reliably identified and other types of gynaecological surgery, such as hysterectomy, are accurately reported (sensitivity 100%, positive predicted value 100%).[6] With low population prevalence, women with non- caesarean section uterine scars are unlikely to impact the analysis of pregnancy risk and outcomes within the Robson classification.

CONFLICTS OF INTEREST

The authors report no conflicts of interest.

ACKNOWLEDGEMENTS

We thank the NSW Ministry of Health for access to the population health data and the Centre for Health Record Linkage (CHeReL) for linkage of the data sets.

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Table 1: Non-caesarean uterine surgery among an obstetric population in New South Wales, Australia, 2005-2011

Procedure	Surgical procedure codes	All deliveries 2005-2011 (N=654,629) N (col %)[a]	Nulliparous deliveries N=929 N (row %)[b]	
			Caesarean delivery	Vaginal delivery
Hysterotomy	35649-00 35649-02	81 (4.2)	9 (64.3)	6 (35.7)
Myomectomy (total)		1,684 (86.3)	624 (72.7)	234 (27.3)
- Laparotomy	35649-03	788 (40.4)	291 (85.3)	50 (14.7)
- Laparoscopy	35649-01	483 (24.8)	196 (67.8)	93 (32.2)
- Hysteroscopy	25623-00	413 (21.2)	137 (60.1)	91 (39.9)
Other uterine repair (total)		91 (4.7)	10 (55.6)	8 (44.4)
- Repair by laparotomy	90435-01	44 (2.3)	3 (75.0)	1 (25.0)
- Repair by laparoscopy	90435-00	47 (2.4)	7 (50.0)	7 (50.0)
Excision of other uterine lesion	90452-00	95 (4.9)	15 (38.5)	24 (61.5)
Total		1,951[c] (100)	658 (70.8)	271 (29.2)

[a.] denominator is non-caesarean uterine surgery (column)

[b.] denominator is nulliparae with a history of the specified procedure (row)

[c.] 1,951 deliveries among 1,535 women; more than one surgery was recorded for 29 deliveries and in those cases the most invasive procedure was counted.