

Dystocia: is it a major indication for caesarean section?

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Summary

Objective: To find out the indications for caesarean sections, the contribution of "dystocia" to the overall caesarean section rates, and to find ways to reduce dystocia-induced caesarean sections.

Method: This was a retrospective study where all caesarean sections performed in 1995 at the Princess Badeea Teaching Hospital in North Jordan (the main teaching and referral hospital in the area) were reviewed.

Results: The caesarean section rate for 1995 was 8.4%. Dystocia was the main indication in 13.4% of all caesarean sections in that year. In 80.2% of patients who delivered because of dystocia labour started spontaneously. Thus if we advocate active management of labour, especially in nulliparous women who start labour spontaneously due to dystocia, we may reduce caesarean section and many repeat caesarean sections could be avoided.

Conclusions: Applying a policy of active management of labour in nulliparous women may be the most useful approach to reduce caesarean section rates in modern obstetric practice.

Key words: Dystocia; Caesarean section.

Introduction

There is widespread concern about high caesarean section rates in obstetric units and these rates are on the increase [1]. This upward trend will continue. Caesarean section rates at the Princess Badeea Teaching Hospital in North Jordan (PBTH) have increased in Jordan in the last few years, from 6.5% in 1990 [2] to 9.2% in 1994 (unpublished data). Caesarean delivery is associated with increased maternal mortality [3] and morbidity, particularly wound infection [4]. The increase in caesarean section rates in the western world in the last two decades has not been responsible for the dramatic improvement in perinatal outcomes during the same period [5]. Varying definitions of dystocia have been used in the literature, such as slow progress and cephalopelvic disproportion. Both dysfunctional labour and poor response to induction of labour can confuse the diagnosis of cephalopelvic disproportion.

In order to find out the caesarean section rates for dystocia, we retrospectively reviewed all caesarean sections performed in 1995 at the main teaching and referral hospital in North Jordan. A major area of interest was dystocia in nulliparous women.

Materials and Methods

Between 1 January and 31 December, 1995 all caesarean sections carried out at the PBTH, were reviewed retrospectively. They were classified into three groups of caesarean sections: 1) primary elective caesarean section, 2) repeat elective caesarean section, and 3) emergency caesarean section just before or during labour.

Dystocia (difficult labour) was subdivided into four subgroups: 1) failed induction of labour - no cervical dilatation after repeating priming with prostaglandins or failure of the cervix to dilate beyond 3 cm after at least 6 hours of adequate oxytocin treatment; 2) persistent occipitoposterior position until delivery; 3) cephalopelvic disproportion (CPD) - failure of the head to descend in the pelvis at full dilatation of the cervix in the presence of adequate uterine activity; 4) dysfunctional labour - a rate of cervical dilatation <1 cm/hr during the active phase of labour.

Statistical analyses were performed with the chi-square tests as appropriate. Differences were considered statistically significant when $p < 0.05$.

Results

During 1995 there were 9,363 deliveries at the PBTH in North Jordan, 2,621 to nulliparous and 6,742 to parous women. Of these, 789 were delivered by caesarean section (rate 8.4%).

Table 1 presents the data of nulliparous and parous women according to the three major categories of caesarean section. Emergency caesarean section before or during labour was the largest single group (25.1% in nulliparous women and 44.3% in parous women).

Tables 2 to 4 present the primary indications for caesarean section in each of the three major categories. Placenta previa and breech presentation were the most common indications for a primary elective caesarean section (Table 2). In the repeat caesarean section group (Table 3) most women had a history of two or more previous caesarean sections (58.9%).

Emergency caesarean section before or during labour (Table 4) accounted for 69.5% of the total caesarean sections, 81% of this group delivered by emergency caesarean section during labour and 19% delivered before the onset of labour. Of this group, approximately 19.3% were for dystocia and 24.6% for fetal distress. Cephalopelvic

Received February 6, 1998
revised manuscript accepted for publication March 9, 1998

Table 1. — *Category of caesarean sections according to parity*

Caesarean section category	Nulliparous		Parous		Total	
	n	%	n	%	n	%
Primary elective	44	5.6	34	4.3	78	9.9
Repeat elective	NA*		163	20.7	163	29.7
Emergency just before or during labour	198	25.1	350	44.3	548	69.4
Total	242	30.7	547	69.3	789	100

NA* not applicable

Table 2. — *Primary indications for first elective caesarean section*

Primary indications	n	%
Breech presentation	17	21.8
Placenta previa	19	24.4
Pre-eclampsia and intrauterine growth retardation	14	18
Unreact-cardiotocogram	6	7.7
Others	22	28.1
Total	78	100

Table 3. — *Primary indications for repeat elective caesarean section*

Primary indications	n	%
Previous ≥ 2 caesarean sections	96	58.9
Previous classical caesarean sections	3	1.8
Breech and one previous caesarean section	13	8
Placenta previa	16	9.8
Poor obstetric history	8	4.9
Big baby	8	4.9
Others	19	11.7
Total	163	100

Table 4. — *Primary indications for emergency caesarean section just before or during labour*

Primary indications	Nulliparous		Parous		Total	
	n	%	n	%	n	%
Dystocia	71	12.9	35	6.4*	106	19.3
Fetal distress	52	9.5	83	15.1	135	24.6
Malpresentation	27	4.9	82	15.0	109	19.9
Antepartum hemorrhage	10	1.8	29	5.3	39	7.1
Preeclampsia	26	4.7	48	8.8	74	13.5
Cord prolapse and presentation	2	0.4	18	3.3	20	3.7
Multiple pregnancy	7	1.3	38	6.9	45	8.2
Others	3	0.6	17	3.1	20	3.7
Total	198	36.1	350	63.9	548	100

Table 5. — *Dystocia subgroups*

Category	n	%
Failed induction	22	20.7
Persistent occipitoposterior	14	13.2
Cephalopelvic disproportion	43	40.6
Dysfunctional labour	27	25.5
Total	106	100

disproportion and dysfunctional labour accounted for 66.1% of caesarean sections done for dystocia. Data for nulliparous women were very similar to that for all subjects (both nulliparous and multiparous) because most of the dystocia occurred in nulliparous women (67% of caesarean sections performed due to dystocia were in nulliparous women), so dystocia among nulliparous women was significantly higher than among multiparous women ($p < 0.0001$).

Discussion

Emergency caesarean section during labour was the largest category of caesarean sections done in 1995 and dystocia was the most common primary indication (13.4%). It was also a contributing factor, directly or indirectly, in a further 15% of all caesarean sections performed that year. Therefore mechanical problems during labour were implicated in up to 28% of all caesarean operations. Because most dystocia problems are confined to nulliparous women (67%), any effort to address this problem must be aimed at the woman in her first labour. If the first caesarean section is avoided, then many subsequent repeat operations (20.7% of all caesareans in 1995) will be unnecessary. In this study we subdivided dystocia into four subgroups: failed induction, dysfunctional labour, persistent occipitoposterior position and CPD. However, overlap between these categories will be present in clinical practice. Data from the National Maternity Hospital, Dublin show that particularly low caesarean section rates for nulliparous women can be achieved without an increase in perinatal mortality [6]. A policy of active management is used in Dublin. The cornerstone of this policy is an accurate diagnosis of labour and early correction of dysfunctional labour in nulliparous women with a singleton fetus presenting by the head. Active management is not applied to parous women or induced labour. O'Driscoll [7] suggests that active management can correct dysfunctional labour and malrotation of the fetal vertex. Active management of labour does reduce the section rate for dystocia as was demonstrated in the United States [8, 9].

The majority of our patients sectioned for dystocia were spontaneous labourers (79.3%) and only 20.7% of caesareans for dystocia were performed on women who had labour induced.

In conclusion, improved management of dystocia in nulliparous women may be the most useful approach in reducing caesarean section rates in modern obstetric practice.

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