

## **RISK FACTORS FOR ANAL SPHINCTER INJURIES ASSOCIATED WITH INSTRUMENTAL DELIVERIES.**

### **Hypothesis / aims of study**

The incidence of anal sphincter injuries is highest among primigravid women. Instrumental deliveries is a known risk factor. The aim of this study was to ascertain if there were other factors in this cohort of women that could contribute to this potentially serious obstetric complication.

### **Study design, materials and methods**

This was a population based study of all primigravid women who had sustained an anal sphincter injury during an assisted vaginal delivery (n=54), compared with those assisted vaginal deliveries in primigravid women without this complication (n=4803) over a ten year period. The study sample was drawn from Cardiff births survey (a computerised maternity information database) comprising of 52, 916 deliveries in the South Glamorgan region during 1990-99.

The exclusion criteria other than multiparity included; stillbirths, fetal congenital malformations, multiple pregnancies and caesarean sections. SPSS version 11 was used for statistical analysis. Independent sample t test, Chi square, Fishers exact tests were used wherever appropriate. A p value of less than 0.05 was considered significant. Possible confounding variables were controlled using logistic regression analysis.

### **Results**

The overall incidence of anal sphincter injury in the study group was 1.1 % (54/4857). This was higher than the background risk of 0.8% in primigravid women in this population.(1). The only significant difference between the two groups was the higher incidence of macrosomia in the cohort with anal sphincter injury (20.4% vs 8.9%) OR 2.6(1.3-5.1). There were no significant differences in age, BMI, mean gestational age, mean birth weight, post dates, duration of second stage, induction, analgesia used, or incidence of shoulder dystocia.

### **Interpretation of results**

In the group with anal sphincter injuries (n=54) two thirds (n=36, ie 67%) of the tears were due to forceps and the remaining (n=18, ie 33%) were due to ventouse. There were no significant differences in patient characteristics, intrapartum events between women delivered by forceps compared with ventouse deliveries. Only 1.6% (36/2313) of forceps delivery and 0.7% (18/2546) of ventouse deliveries resulted in anal sphincter injuries, OR forceps/ventouse 2.2(1.3-3.9).

### **Concluding message**

The choice of studying primigravid women undergoing assisted vaginal delivery was because these women are at the highest risk of anal sphincter injuries and this also reduced the potential for confounding variables that could affect such studies.

Women undergoing an instrumental delivery should be carefully counselled regarding risk of anal sphincter injury, especially when forceps is the instrument of choice by the operator in a potentially macrosomic foetus.

### **References**

1. The incidence risk factors and obstetric outcome in primigravid women sustaining anal sphincter tears. *Acta Obstet et Gynecol Scand* 2003 Aug;82(8):736-43.