



CLINICAL ARTICLE

## Soft forceps

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Received 12 August 2004; received in revised form 8 November 2004; accepted 19 November 2004

### KEYWORDS

Labor;  
Operative delivery;  
“Soft” forceps

### Abstract

**Objective:** The risk of maternal and fetal trauma and, chiefly, the fear of law suits, have contributed to a significant decline in rates of forceps-assisted deliveries and an increase in rates of cesarean sections, especially in the United States. Our experience with gas-sterilized forceps blades covered with a soft rubber coating—the “soft” forceps—is described. **Method:** Ninety-six women who required a forceps-assisted delivery for standard indications were randomly allocated to 2 groups. There were 51 women in the regular forceps group and 45 women in the soft forceps group. Low forceps delivery with a Simpson instrument was used in all cases. The groups were compared for fetal injury. **Results:** The rates of severe facial abrasion and minimal marking were 4.1% and 61%, respectively, in the regular forceps group and 1.9% and 34% in the soft forceps group. **Conclusion:** The soft forceps may reduce the rates of neonatal facial abrasion and skin bruises. The forceps should be further perfected, as well as vacuum extractors; they should both continue to be part of the obstetrician’s armamentarium.

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## 1. Introduction

Obstetric forceps first made their appearance in 17th-century Europe, when nearly all deliveries were performed by midwives. The Chamberlain family had a secret forceps, which was guarded

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carefully and thought to be the reason behind their successful results [1]. By the mid-1700s forceps were introduced into the general practice, where they have been in use throughout the world ever since. In recent decades, however, the use of forceps has steadily declined, concurrently with an increase in cesarean delivery rates. Zahniser et al. [2] analyzed data from the National Hospital Discharge Survey to examine these trends in the United States from 1980 to 1987. The cesarean delivery rate increased by 48% whereas the rate of forceps procedures declined by 43%. As forceps delivery skills are not widely taught to resident obstetricians, ever fewer numbers of attending obstetricians are able to use and teach the use of forceps to the next generation of residents [3].

Cesarean section, an alternative to forceps-assisted delivery in the United States, has its own set of associated morbidities, including greater rates of infection [4], increased risk of thromboembolic events, blood loss and necessary transfusions, postpartum pain, maternal mortality, longer hospital stay and recovery, delayed back-to-work time, and increased risk for subsequent pregnancies such as placenta previa, placenta accreta, uterine rupture, and hysterectomy—as well as fetal neurologic injuries and death as consequences of attempted vaginal birth after a cesarean section. Cesarean sections can also complicate subsequent nonobstetric surgical procedures because of adhesion and scar formation. Thus, the need for the forceps as a tool to safely perform vaginal deliveries continues to exist. In this article our experience with the “soft” forceps—gas-sterilized forceps blades covered with a soft rubber coating (Fig. 1)—is reported. We use the soft forceps in our attempt to make low-forceps delivery an even less trau-

matic procedure and to reintroduce this valuable instrument which, along with vacuum extractors, would allow to achieve greater numbers of vaginal deliveries and, possibly, decrease the rates of cesarean deliveries and their complications.

## 2. Material and methods

Ninety-six patients who required forceps-assisted delivery at the National Institute of Maternal Health in Moscow for standard medical indications were randomly assigned to 2 groups from February 1999 to March 2003. There were 51 women in the regular forceps group (group 1) and 45 women in the soft forceps (group 2). The institutional review board approved the use of the soft forceps. Informed consent was obtained in each case. Following the American College of Obstetrician and Gynecologist guidelines, a low forceps delivery with a Simpson instrument was performed in all cases.

To create the soft forceps the blade portion of the forceps was dipped 2 or 3 times for 5 s in a multipurpose rubber-coating dip (Performix; Circle pines, Minn) to provide a soft coating. This rubber cover added 1.5 mm to the thickness of the blades, but this was required to obtain a soft forceps. The forceps was gas-sterilized after being coated, and the coating was removed after each use. Coating and sterilizing procedures were then repeated for future use.

The 2 groups were similar in mean age, parity, race, epidural use, episiotomy rate, and estimated fetal weight. The obstetrics resident and the staff physician on call cared for the patients. Membranes were ruptured, spontaneously or not, prior to forceps application. All patients had a cervix fully

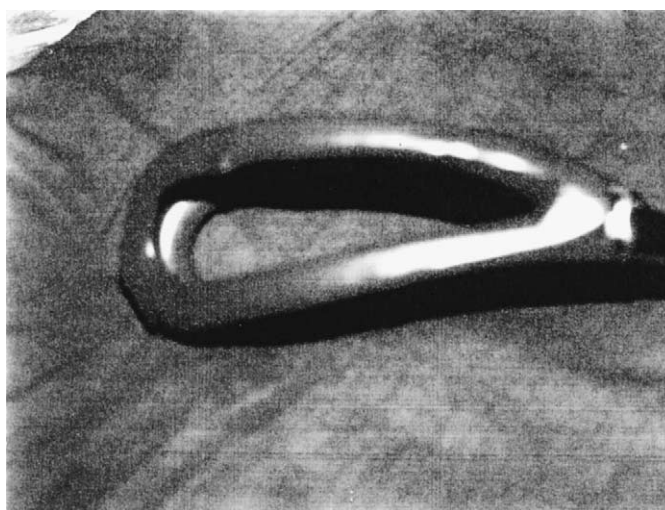


Figure 1 Soft forceps.

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