

Postpartum sterilisation by the Irving technique

A report of 200 cases at Paarl Hospital, CP

V. P. DE VILLIERS, D. J. MORKEL

Summary

Sterilisation by the Irving procedure accompanying caesarean section was the favoured form of sterilisation at Paarl Hospital from 1971 to 1985. No subsequent pregnancies have been reported from the 200 cases and this success is compared with sterilisation failure rates of 1,35% with the Pomeroy method, 1,27% with the total fimbriectomy method, 0,41% with the Vienna or modified Pritchard method, and 0,89% with the Filshie-clip method: Irving sterilisation is accordingly advised as the method of choice at the time of caesarean section.

S Afr Med J 1987; 71: 253.

Dissatisfied with the available methods of tubal ligation accompanying caesarean section, Frederick Irving of Boston first published the details of his procedure in 1924.¹ Irving not only divided the Fallopian tubes but also buried the proximal segments within a myometrial tunnel to prevent all possibility of recanalisation. By 1950, Irving² had performed 814 such ligations without failure. Garb³ in 1957 located no failures among 1 086 recorded cases in his extensive research on failure of sterilisation.

In the RSA sterilisation failure is not a legal justification for termination of pregnancy⁴ and therefore every effort is necessary to prevent this catastrophe. The Irving method was adopted at Paarl Hospital from 1971 onwards.

Patients and methods

All doctors who worked in the University of Stellenbosch maternity unit at Paarl Hospital were encouraged to adopt the Irving method of tubal ligation accompanying caesarean section from 1 January 1971. A total of 4 640 postpartum sterilisations were performed between this date and 31 August 1985; of these 200 were by the Irving method.

The technique followed is: with the caesarean section complete and the uterus still outside the abdominal wall, both fallopian tubes and ovaries are inspected. The isthmal tube is severed 3 cm from the uterus and tied with chromic catgut at both ends. The ligatures on the uterine end are kept long and the stump of this proximal end is buried within a myometrial tunnel just posterior to the round ligament. This tunnel is formed by blunt probing

with the tip of an arterial forceps to minimise blood loss. The stump is pulled into the tunnel with the first atraumatic needle still attached to the ligature. The other end is threaded into a loose needle and this is also pulled into the tunnel. The ends are now tied over the tunnel aperture to achieve haemostasis. Occasionally a figure-of-eight suture is also necessary. The time taken for bilateral tubal ligation is never more than 5 minutes.

Results

No patient has had a subsequent pregnancy among the 200 cases of Irving sterilisation. The number of patients followed up for more than 2 years is 151. Within the same period 44 sterilisation failures occurred in patients operated on at Paarl Hospital, as follows:

- 891 Pomeroy procedures — 12 pregnancies (1,35%)
- 1 572 fimbriectomy procedures — 20 pregnancies (1,27%)
- 1 219 Vienna procedures — 5 pregnancies (0,41%)
- 785 Filshie-clip procedures — 7 pregnancies (0,89%)

Two pregnancies occurred with only a unilateral attempt at sterilisation, with tubo-ovarian masses present on the contralateral side.

Discussion

It is imperative that research is intensified to offer total security to any patient who has a sterilisation procedure. Although the Paarl experience of 200 procedures, with most of these patients followed up for more than 2 years (80% of pregnancies after failed sterilisation occur within the first 2 years⁴), substantiates the reliability of the Irving sterilisation technique and confirms the conclusions of Garb's³ review article; total permanence is not possible. Unfortunately even the Irving technique cannot offer total reassurance. The first pregnancy to occur after an Irving sterilisation was recorded in 1959 by Hornstein⁵ and 1 other case has recently been reported.⁶ These 2 sterilisation-failure reports are particularly distressful for South Africa since many of our patients are of a low socio-economic status. Pregnancy subsequent to sterilisation is a disaster such a woman and her family can ill afford. Any sterilisation failure will ripple through the community and create resistance to a widespread acceptance of sterilisation so necessary for the attainment of demographic stability in South Africa.

REFERENCES

1. Irving FC. A new method of insuring sterility following caesarean section. *Am J Obstet Gynecol* 1924; 8: 335-337.
2. Irving FC. Tubal sterilization. *Am J Obstet Gynecol* 1950; 60: 1101-1106.
3. Garb AE. A review of tubal sterilization failures. *Obstet Gynecol Surv* 1957; 12: 291-305.
4. De Villiers VP. Sterilization failure: an analysis of 27 pregnancies after a previous sterilization procedure. *S Afr Med J* 1982; 61: 589-590.
5. Hornstein S. Abdominal pregnancy following Irving tubal ligation. *Obstet Gynecol* 1959; 13: 337-340.
6. Green LR, Laros RK. Post partum sterilization. *Clin Obstet Gynaecol* 1980; 2: 647-659.

Department of Obstetrics and Gynaecology, University of Stellenbosch, Parowvallei, CP and Paarl Hospital, Paarl, CP

V. P. DE VILLIERS, F.R.C.O.G.

D. J. MORKEL, M.B. CH.B.