# Effect of Cesarean Scar Defect (Isthmocele) For Future Fertility, Critical Apprisal on The Management Options

Prof.Dr.Murat Api MD,PhD

Istanbul Aydin University Faculty of Medicine, Turkey

# Morris 1995

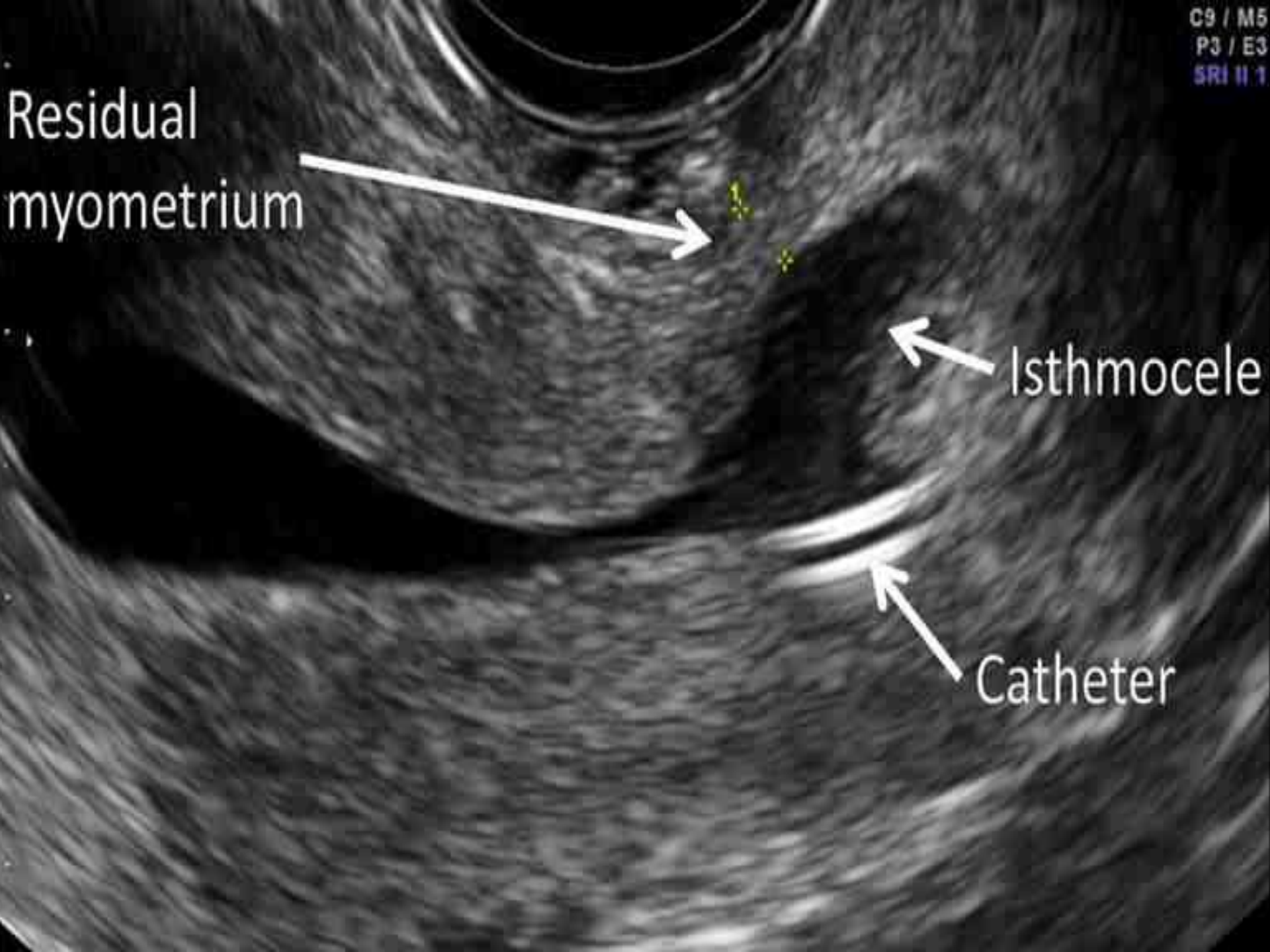
51 hysterectomy specimen including distortion and widening of the lower uterine segment (75%)

Int J Gynecol Pathol. 1995 Jan;14(1):16-20.

**Surgical pathology of the lower uterine segment caesarean section scar: is the scar a source of clinical symptoms?**

Morris H[1].

ISTHMOCELE is a reservoir like pouch defects on the anterior wall of uterine isthmus located at the site of previous cesarean incision. Cesarean-induced isthmocele may lead to the occurrence of gynecological symptoms such as abnormal bleeding, pelvic pain and infertility.


C9 / M5
P3 / E3
SRI II 1
Residual myometrium
Isthmocele
Catheter

# Does Cesarean section effect subsequent fertility?

Human Reproduction, Vol.29, No.6 pp. 1320–1326, 2014
Advanced Access publication on April 29, 2014 doi:10.1093/humrep/deu057

human reproduction

ORIGINAL ARTICLE *Reproductive epidemiology*

# A population-based cohort study of the effect of Caesarean section on subsequent fertility

**I. Gurol-Urganci[1,2,*], D.A Cromwell[2], T.A Mahmood[1], J.H van der Meulen[2], and A. Templeton[1]**

[1]Office for Research and Clinical Audit, Lindsay Stewart R&D Centre, Royal College of Obstetricians and Gynaecologists, London NW1 4RG, UK
[2]Department of Health Services Research and Policy, London School of Hygiene and Tropical Medicine, London WC1H 9SH, UK

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UK data from over one million women between 2000 and 2012.

21% cesarean rate : 4% elective.

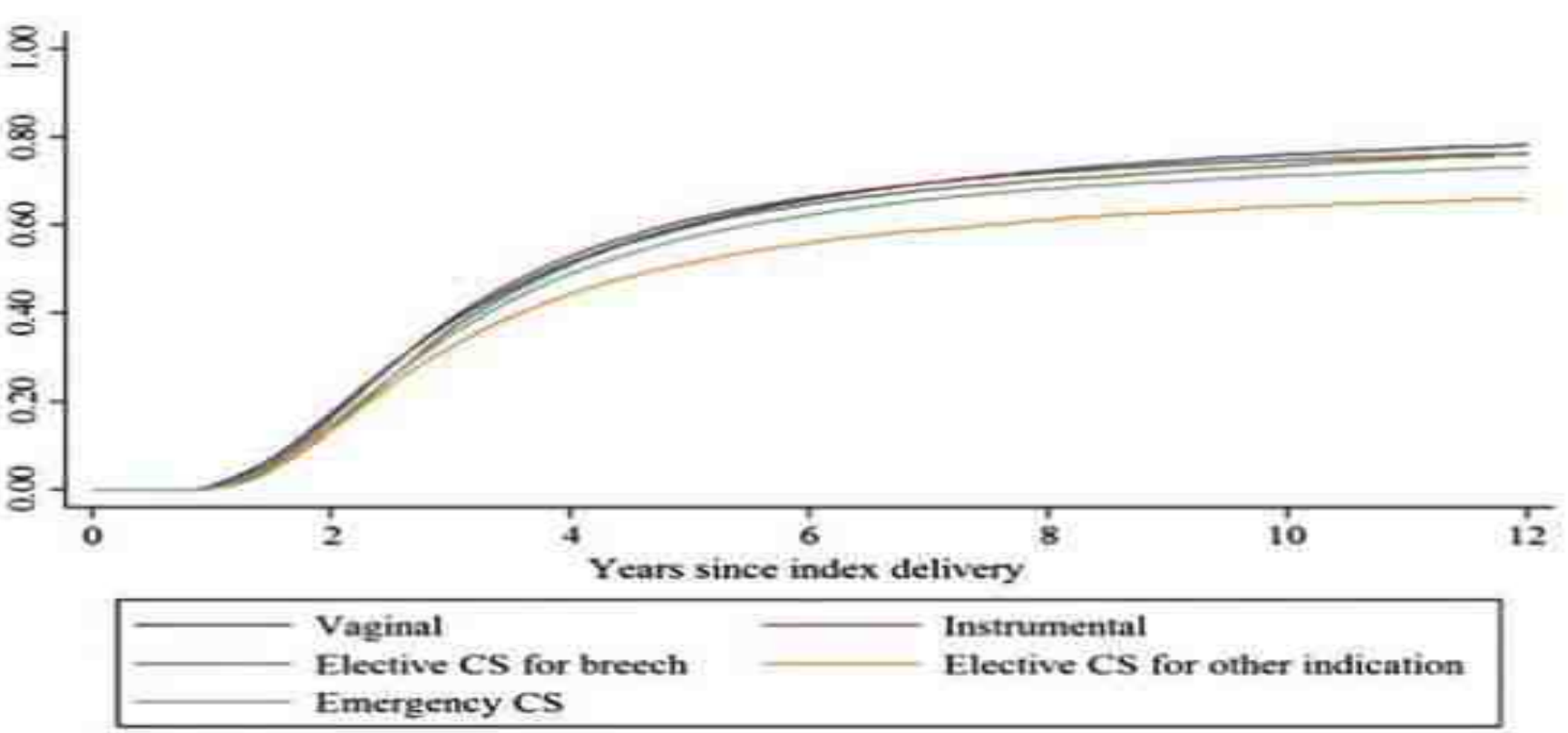
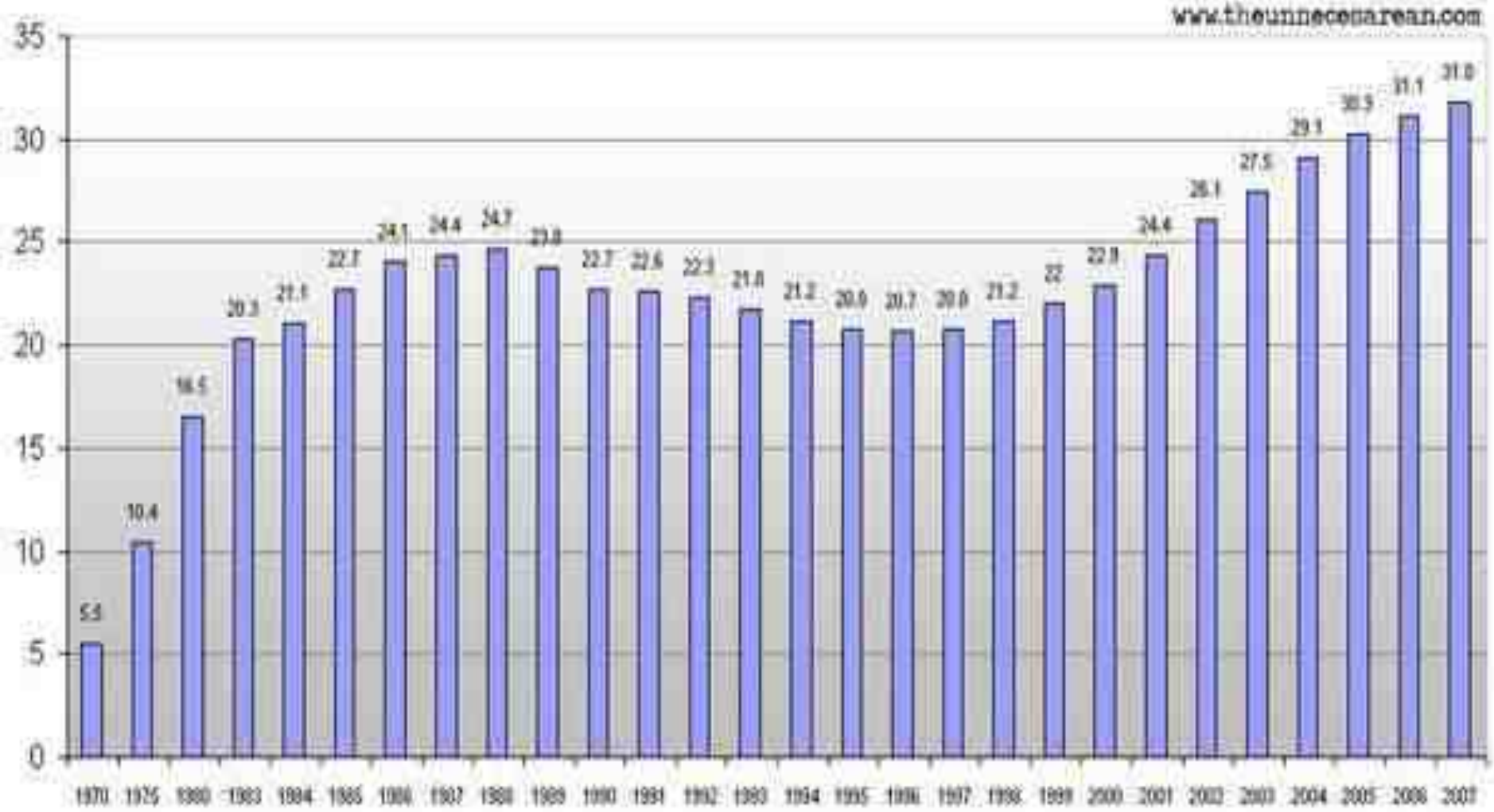


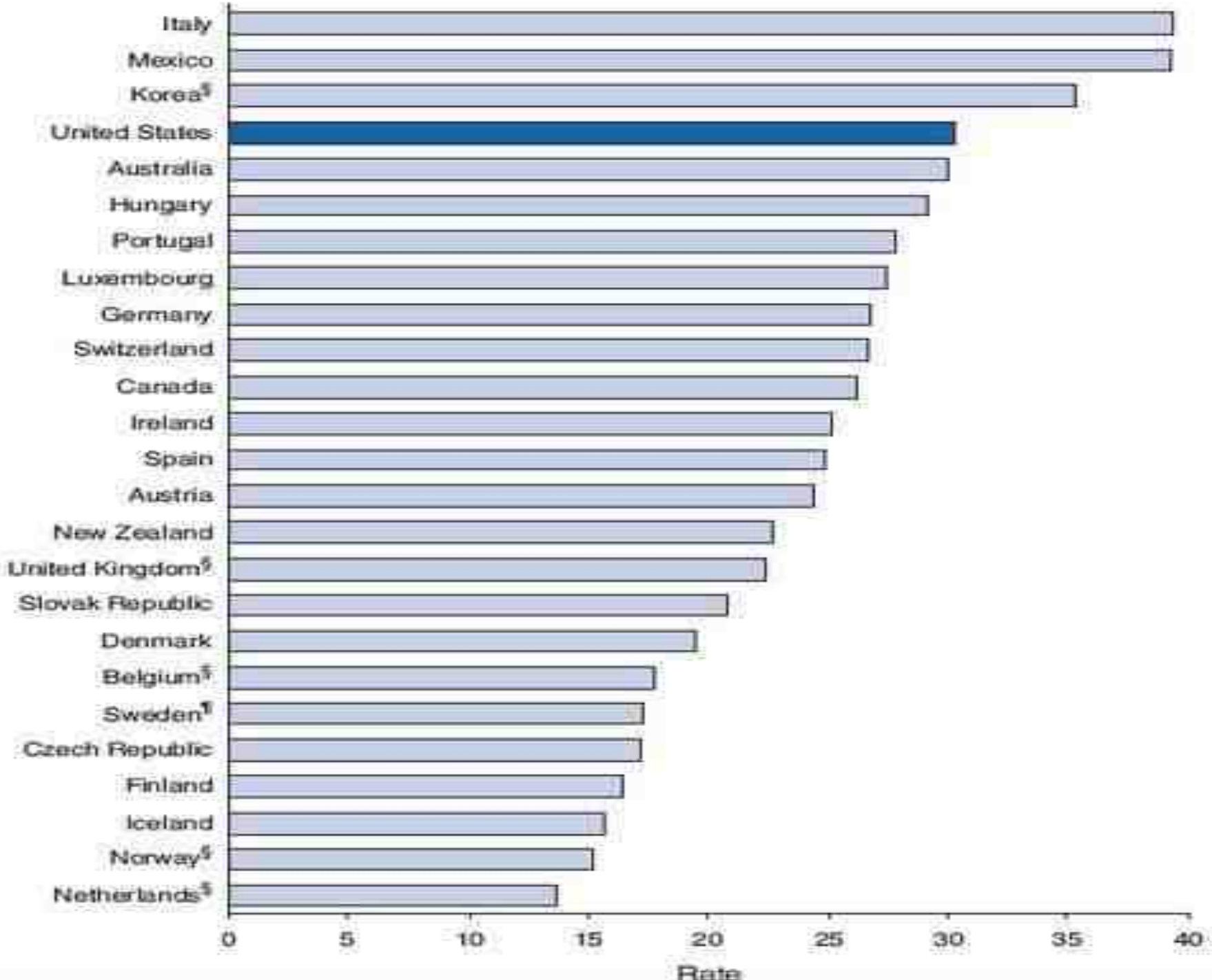

**Figure 1** Kaplan–Meier estimates of the proportion of women having a subsequent birth, stratified by mode of delivery at index birth, unadjusted.

| Mode of delivery | Unadjusted HR* (95% CI) | Adjusted HR* (95% CI) |
|---|---|---|
| Vaginal | 1 | 1 |
| Instrumental | 1.00 (0.99,1.01) | 1.00 (0.99,1.01) |
| Elective CS for breech | 0.94 (0.92,0.96) | 0.96 (0.94,0.98) |
| Elective CS for other indication | 0.76 (0.74,0.79) | 0.81 (0.78,0.83) |
| Emergency CS | 0.90 (0.88,0.91) | 0.91 (0.90,0.93) |

# Total United States Cesarean Rate, 1970- 2007




Source Data: http://www.cdc.gov/nchs/data/nvsr/nvsr54/nvsr54_04.pdf
http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1847267/?page=2
http://www.cdc.gov/mmwr/preview/mmwrhtml/00036845.htm


Italy
Mexico
Korea[5]
United States
Australia
Hungary
Portugal
Luxembourg
Germany
Switzerland
Canada
Ireland
Spain
Austria
New Zealand
United Kingdom[5]
Slovak Republic
Denmark
Belgium[5]
Sweden[1]
Czech Republic
Finland
Iceland
Norway[5]
Netherlands[5]
0
5
10
15
20
25
30
35
40
Rate

# SEZARYEN ORANLARI

| Kurumlar | | Sezaryen Oranı (%) | | | | | Primer Sezaryen Oranı (%) | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2009 | 2010 | 2011 | 2012 | 2013 İlk 6 Ay | 2009 | 2010 | 2011 | 2012 | 2013 İlk 6 Ay |
| Devlet | İl | | | | | | | | | | |
| | Türkiye | 39,3 | 40,2 | 36,8 | 35,3 | 36,0 | 24,3 | 22,3 | 17,6 | 15,4 | 15,5 |
| Özel | İl | | | | | | | | | | |
| | Türkiye | 61,8 | 63,7 | 66,6 | 66,2 | 67,7 | 40,8 | 36,3 | 38,3 | 37,3 | 38,2 |
| Üniversite | İl | | | | | | | | | | |
| | Türkiye | 63,2 | 65,2 | 65,9 | 62,6 | 62,8 | 42,6 | 38,4 | 37,4 | 33,6 | 32,4 |

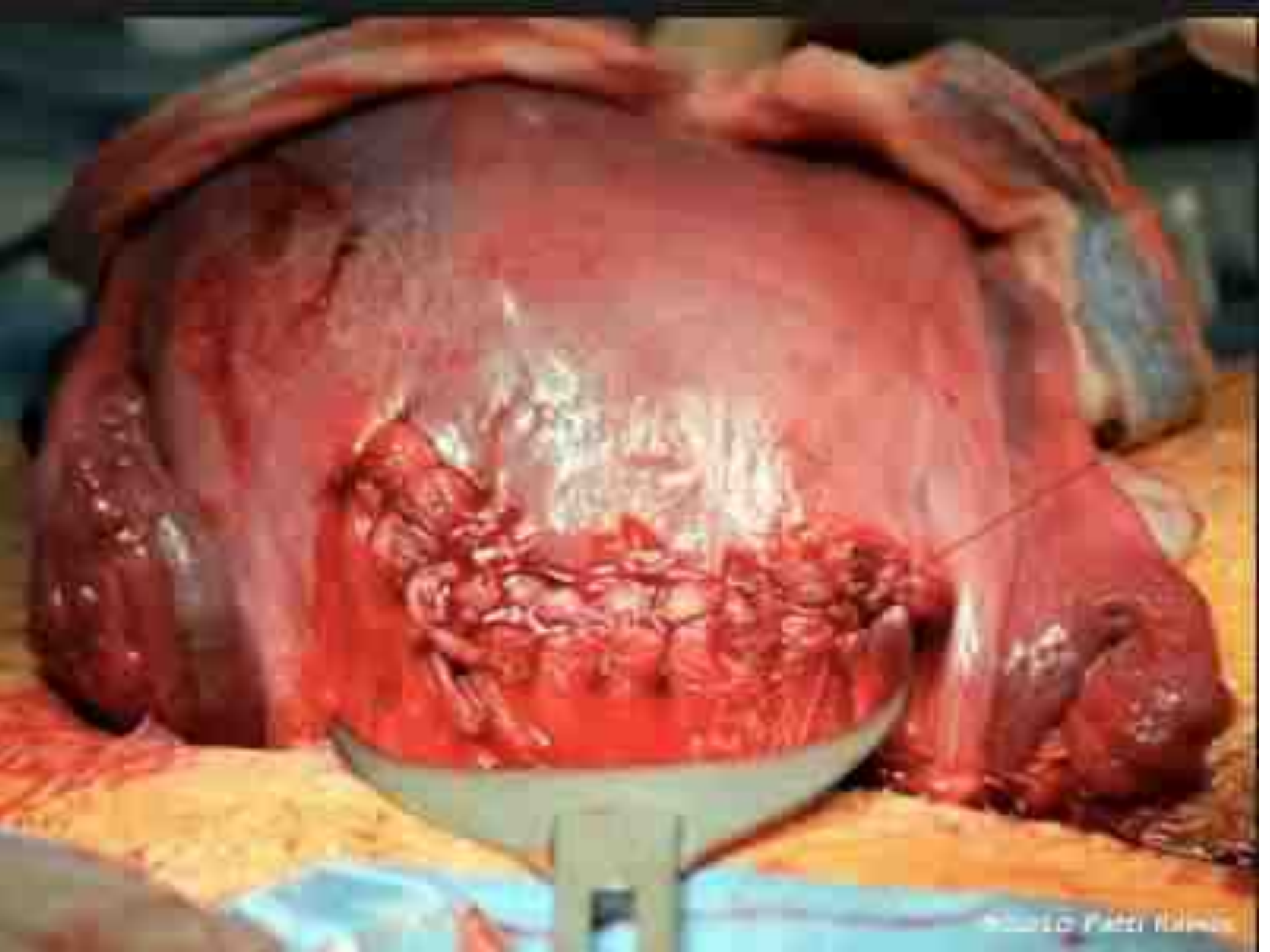
# HASTANE DOĞUMLARI ve SEZARYEN DEĞERLERİ

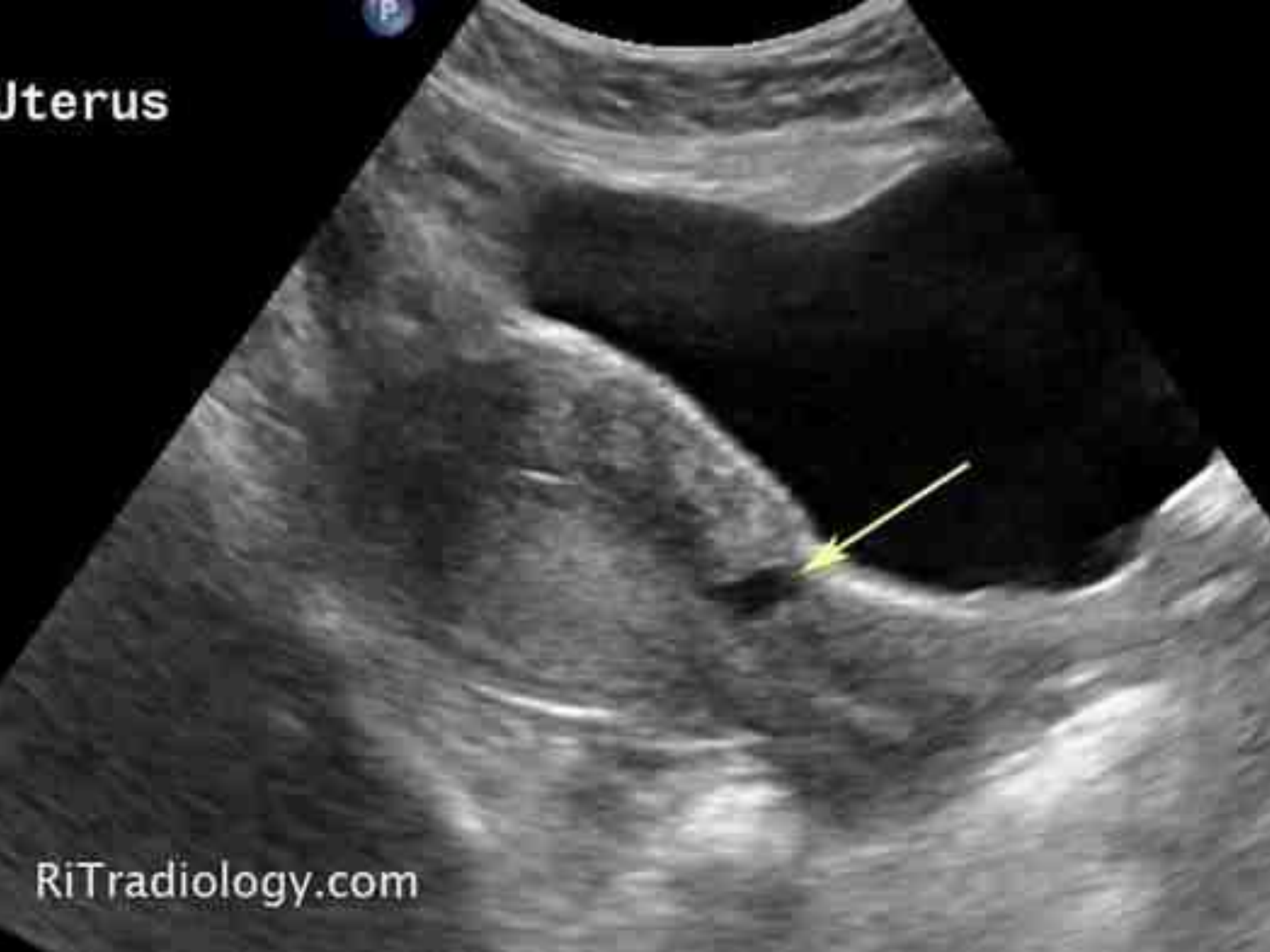
| | Hastane Doğum Oranı* (%) | | Sezaryen Oranı **(%) | | Primer Sezaryen Oranı*** (%) | |
|---|---|---|---|---|---|---|
| | İl | Türkiye | İl | Türkiye | İl | Türkiye |
| 2009 | | 89,4 | | 42,7 | | 27,2 |
| 2010 | | 91,6 | | 45,5 | | 25,7 |
| 2011 | | 93,7 | | 46,6 | | 24,9 |
| 2012 | | 96,8 | | 48,0 | | 24,6 |
| 2013 İlk 6 Ay | | 98,3 | | 50,3 | | 25,8 |

*Hastane doğum verileri illerden aylık gönderilen formlardan hesaplanmaktadır.

**Sezaryen Oranı: (Toplam Sezaryen Sayısı/Toplam Doğum Sayısı)x100

***Primer Sezaryen Oranı: (Primer sezaryen Sayısı/Toplam Doğum Sayısı)x100



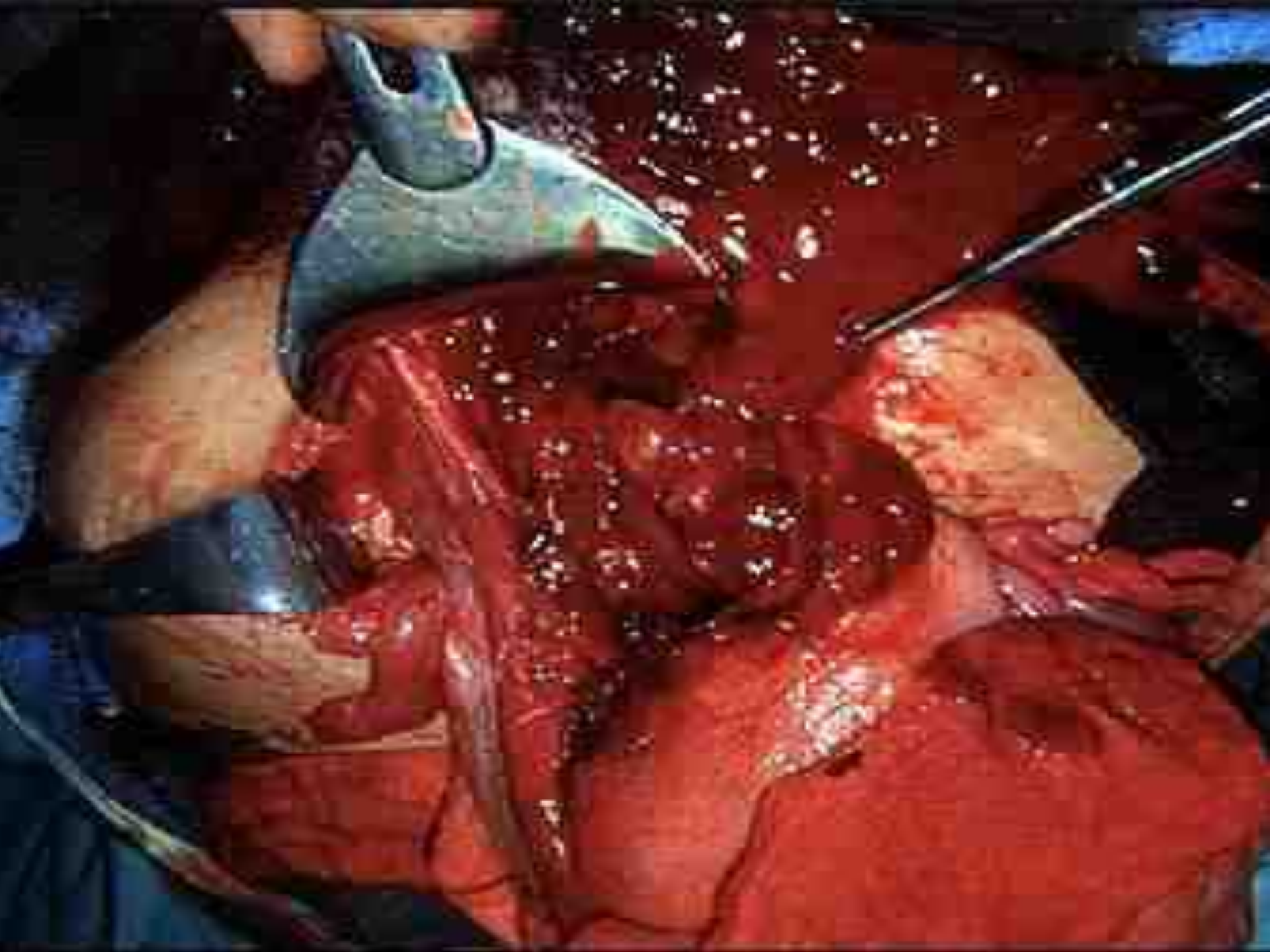

Uterus
RiTradiology.com

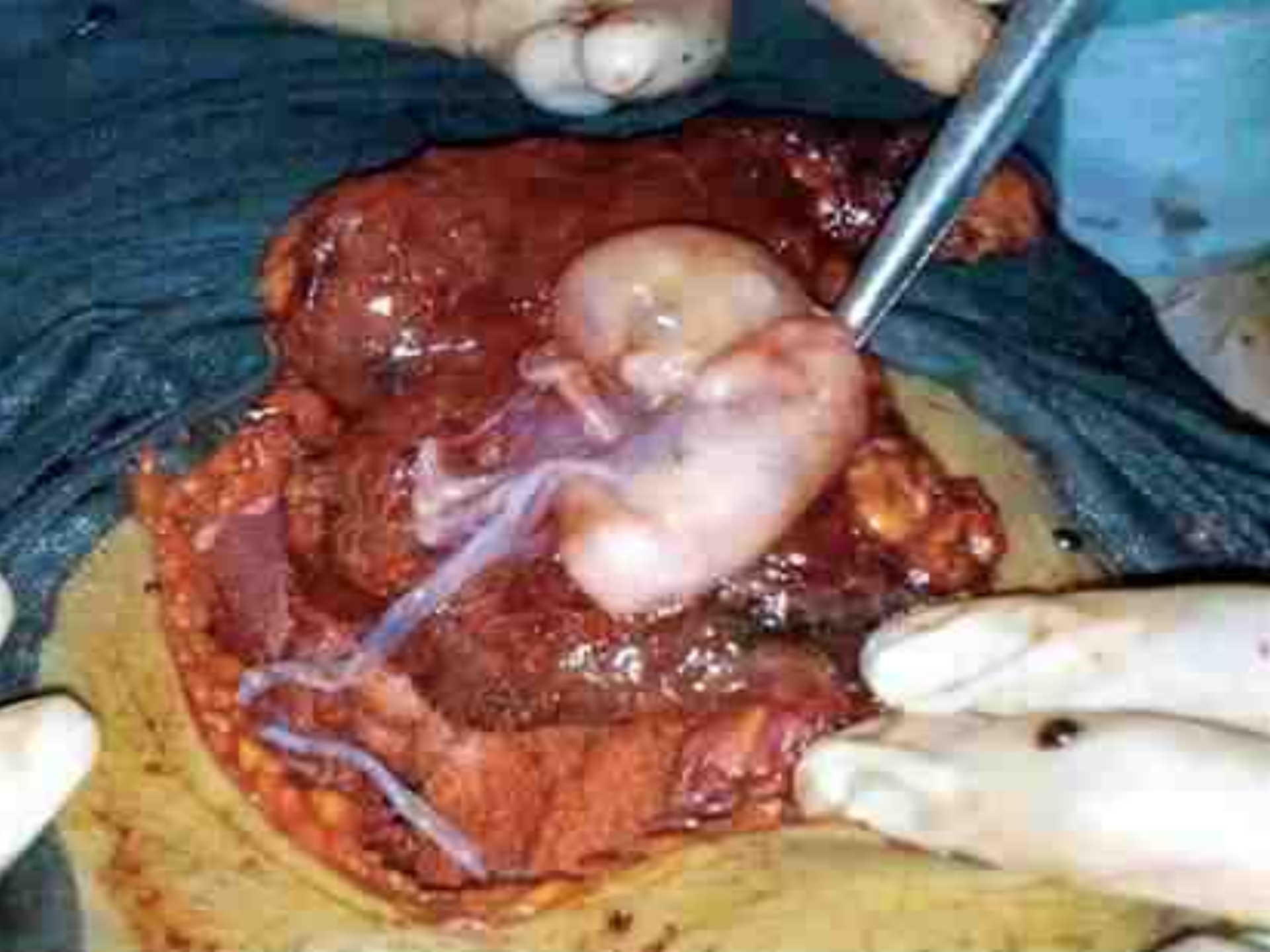

Uterine
Cavity
sac
cervix

*IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)*
*e-ISSN: 2279-0853, p-ISSN: 2279-0861. Volume 13, Issue 1 Ver. IX. (Feb. 2014), PP 44-47*
*www.iosrjournals.org*

# Silent Scar Dehiscence in Previous Lscs Patients: Six Case Reports Our Experience and Review of Literature

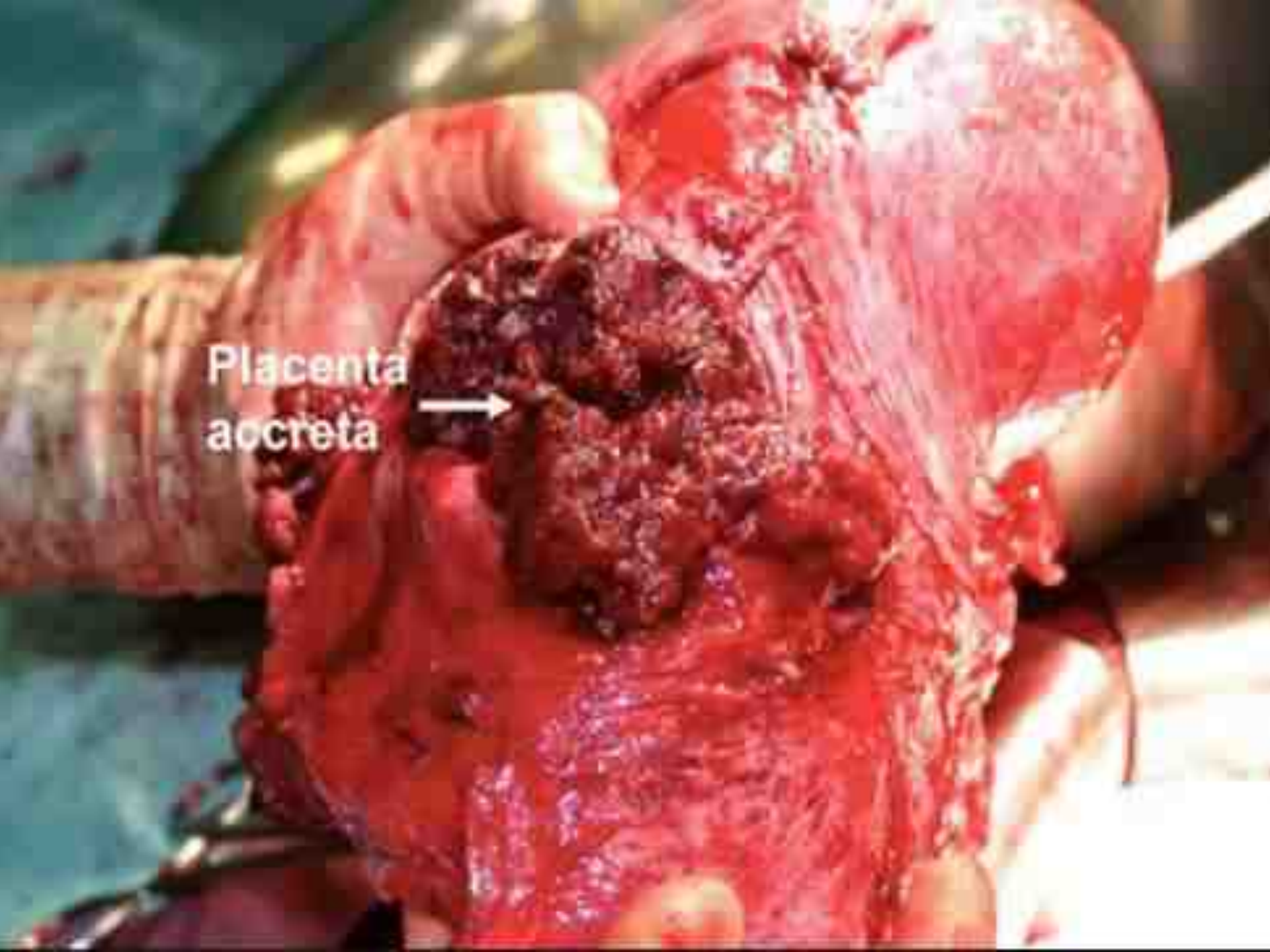
*Krishna Mandade[1], Shravani Chalasani[1], Bhavthankar DP[2], Dr. Sarita deshpande[3]





Fabres 2003, Belinda 2010, Donnez 2008, Gubbini 2011


AUB
Dysmenorrhoe
Dysparounia
CPP
Wang 2009


Placenta
accreta

JMIG The Journal of Minimally Invasive Gynecology



< Previous Article February 2015 Volume 22, Issue 2, Pages 297–301 Next Article >

# Hysteroscopic Treatment of Symptomatic Cesarean-induced Isthmocele: A Prospective Study

Gennaro Raimondo, MD, Gaetano Grifone, MD, Diego Raimondo, MD, Renato Seracchioli, MD, Giovanni Scambia, MD, Valeria Masciullo, MD, PhD

120 cases 87% symptomatic relief

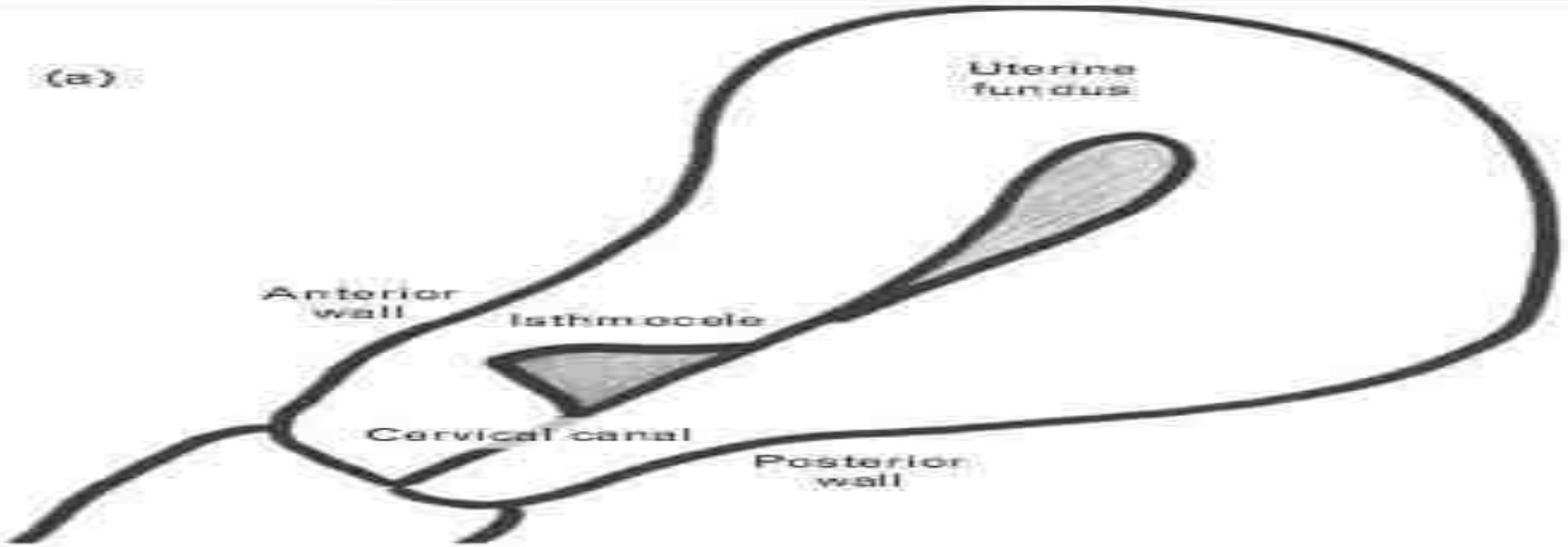
13% no relief

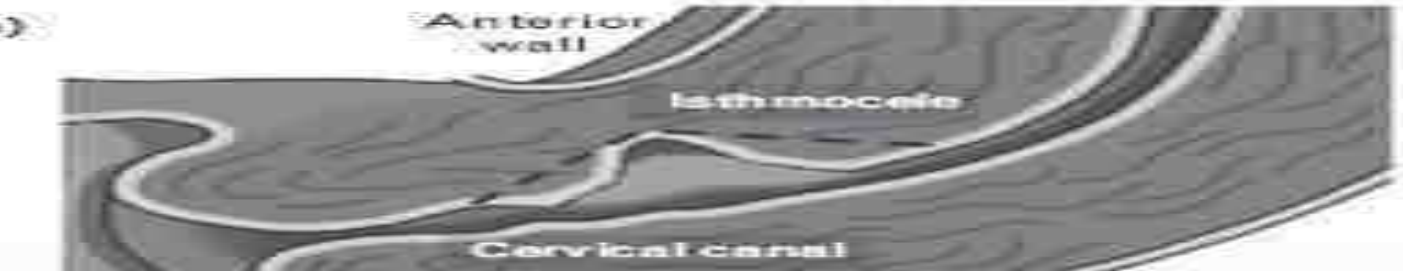
CURRENT OPINION

# Hysteroscopic treatment of the cesarean-induced isthmocele in restoring infertility

2012

*Pasquale Florio*[a,b], *Marco Filippeschi*[b], *Irene Moncini*[a], *Elena Marra*[c], *Mario Franchini*[d], *and Giampietro Gubbini*[b]



ELSEVIER

41 secondary infertile
Hysteroscopic resection
90% live bith rate

THE JOURNAL OF
MINIMALLY INVASIVE
GYNECOLOGY

**Instruments and Techniques**

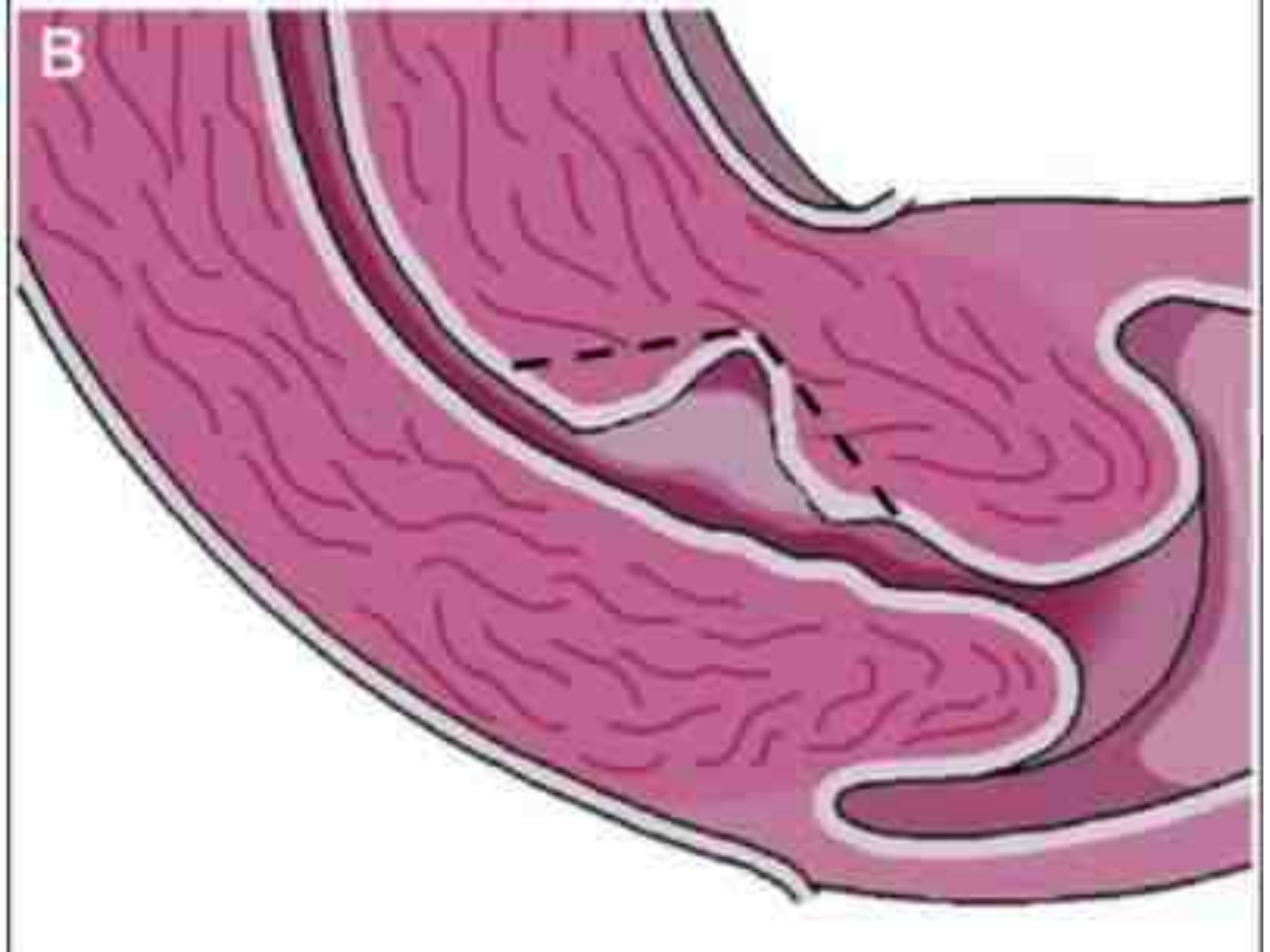
2011

# Surgical Hysteroscopic Treatment of Cesarean-Induced Isthmocele in Restoring Fertility: Prospective Study

Giampietro Gubbini, MD, Gabriele Centini, MD, Daniela Nascetti, MD, Elena Marra, MD, Irene Moncini, MD, Luca Bruni, MD, Felice Petraglia, MD, and Pasquale Florio, MD, PhD*

*From the Division of Gynecology, Madre Fortunata Toniolo Hospital, Bologna (Drs. Gubbini, Nascetti, and Marra), and Department of Pediatrics, Obstetrics and Reproductive Medicine, Section of Obstetrics and Gynecology, University of Siena, Siena (Drs. Centini, Moncini, Bruni, Petraglia, and Florio), Italy.*

- 41 consecutive patients with cesarean-induced isthmocele and secondary infertility was evaluated prospectively.
- infertility duration of 3 to 8 (4.6 [28]) years
- Complaints: postmenstrual abnormal uterine bleeding, and suprapubic pelvic pain.
- Transvaginal ultrasound and office hysteroscopy were used to diagnosis isthmocele.
- Complete fertility tests were performed to exclude other causes of infertility in both female and male participants.
- Operative hysteroscopy was performed to correct the cesarean scar defect, and histologic findings were evaluated.
- Correction of isthmocele via operative hysteroscopy was suc- cessful in all cases evaluated.
- Patients became pregnant spontaneously between 12 and 24 months after isthmoplasty.
- 37 of the 41 patients (90.2%) delivered via cesarean section, and 4 (9.8%) had a spontaneous abortion in the first trimester.

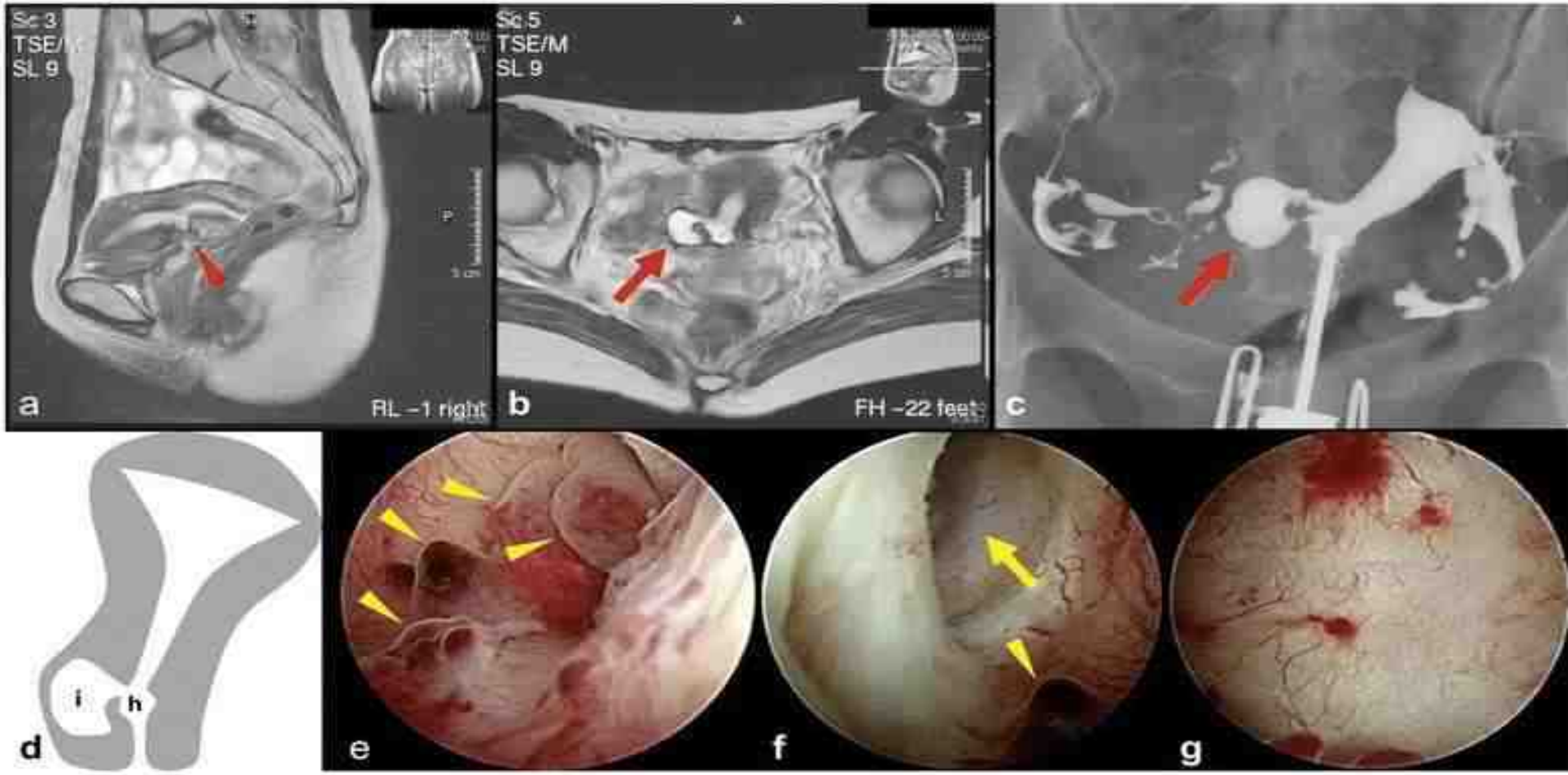

B

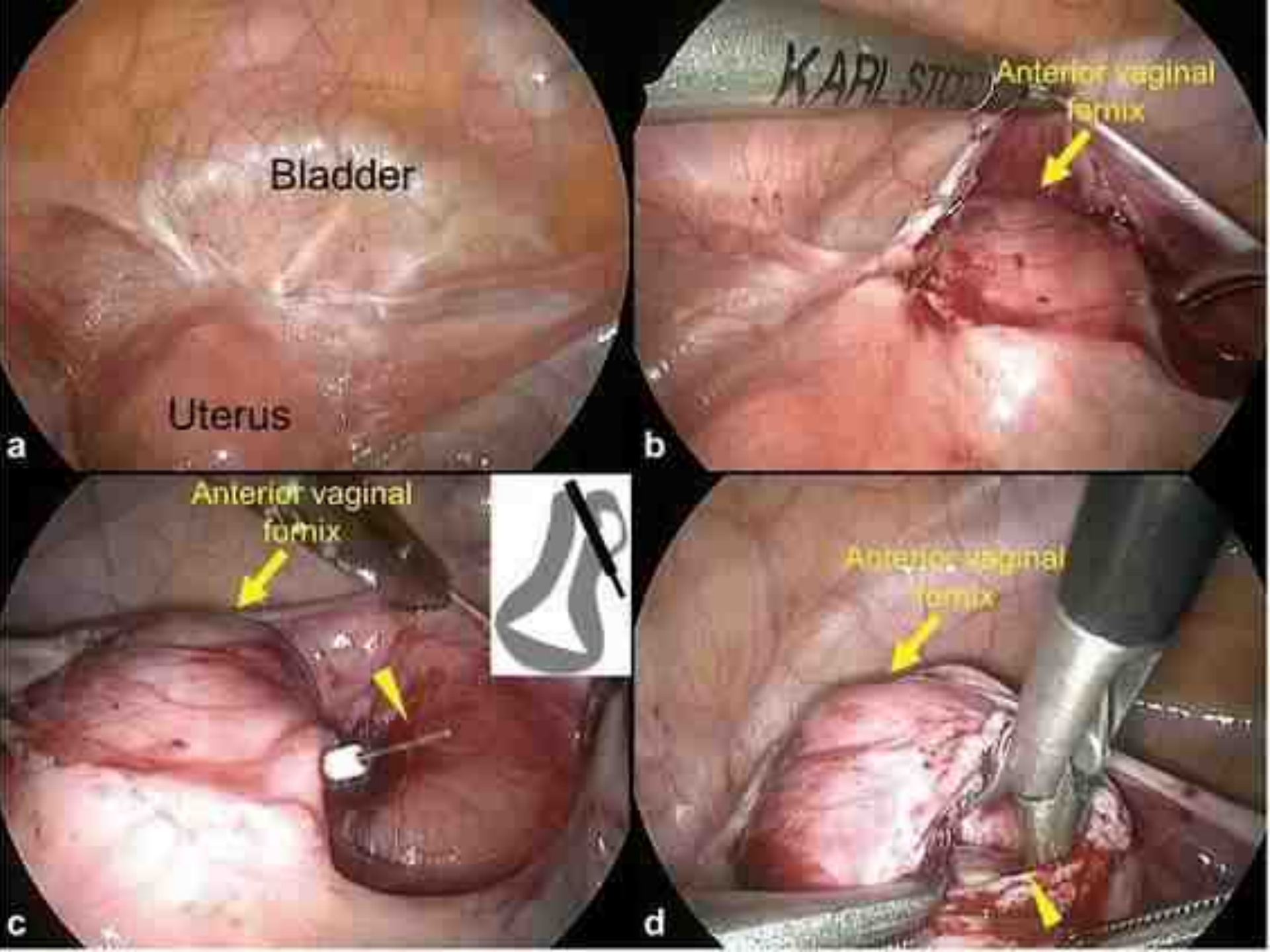
BMC Pregnancy Childbirth. 2015; 15: 342.
Published online 2015 Dec 22. doi: 10.1186/s12884-015-0730-x
PMCID: PMC4687144

# Successful treatment of atypical cesarean scar defect using endoscopic surgery

Hirotaka Masuda,✉ Hiroshi Uchida, Tetsuo Maruyama, Kenji Sato, Suguru Sato, and Mamoru Tanaka

Author information ► Article notes ► Copyright and License information ►




Bladder
Uterus
a
Anterior vaginal fornix
b
Anterior vaginal fornix
c
Anterior vaginal fornix
d

Gynecol Obstet Fertil. 2013 Oct;41(10):588-96. doi: 10.1016/j.gyobfe.2013.08.005. Epub 2013 Oct 4.

LT
LS
Vaginal

# [Uterine ishtmique transmural hernia: results of its repair on symptoms and fertility].

[Article in French]

Jeremy B[1], Bonneau C, Guillo E, Paniel BJ, Le Tohic A, Haddad B, Madelenat P.

Author information

10/14 (71%) pregnancy

## Abstract

**OBJECTIVE:** To study the effect of the surgical repair (isthmorraphy) of the large scar dehiscence after cesarean on symptoms and fertility for women who desire pregnancy.

**PATIENTS AND METHODS:** In this retrospective study, 14 symptomatic patients, who desire a new pregnancy underwent a surgical repair by laparotomy, laparoscopic or vaginal technique. Five women experienced failure of Assistance Reproductive Technique (IVF or ICSI) for idiopathic secondary infertility. The dehiscent scars were evaluated by ultrasound, hysterography, hysteroscopy and magnetic resonance imaging.

**OUTCOME:** Symptoms improvement was found in 92% of case. Ten pregnancy (71%) was obtained after surgical repair, 6 spontaneous and 4 after Assistance Reproductive Technique. Among the 5 women initially followed in the reproductive unit, 4 became pregnant, 3 after IVF or ICSI and 1 spontaneous. No operative complication occurred. The subsequent pregnancy was unremarkable with no uterine rupture.

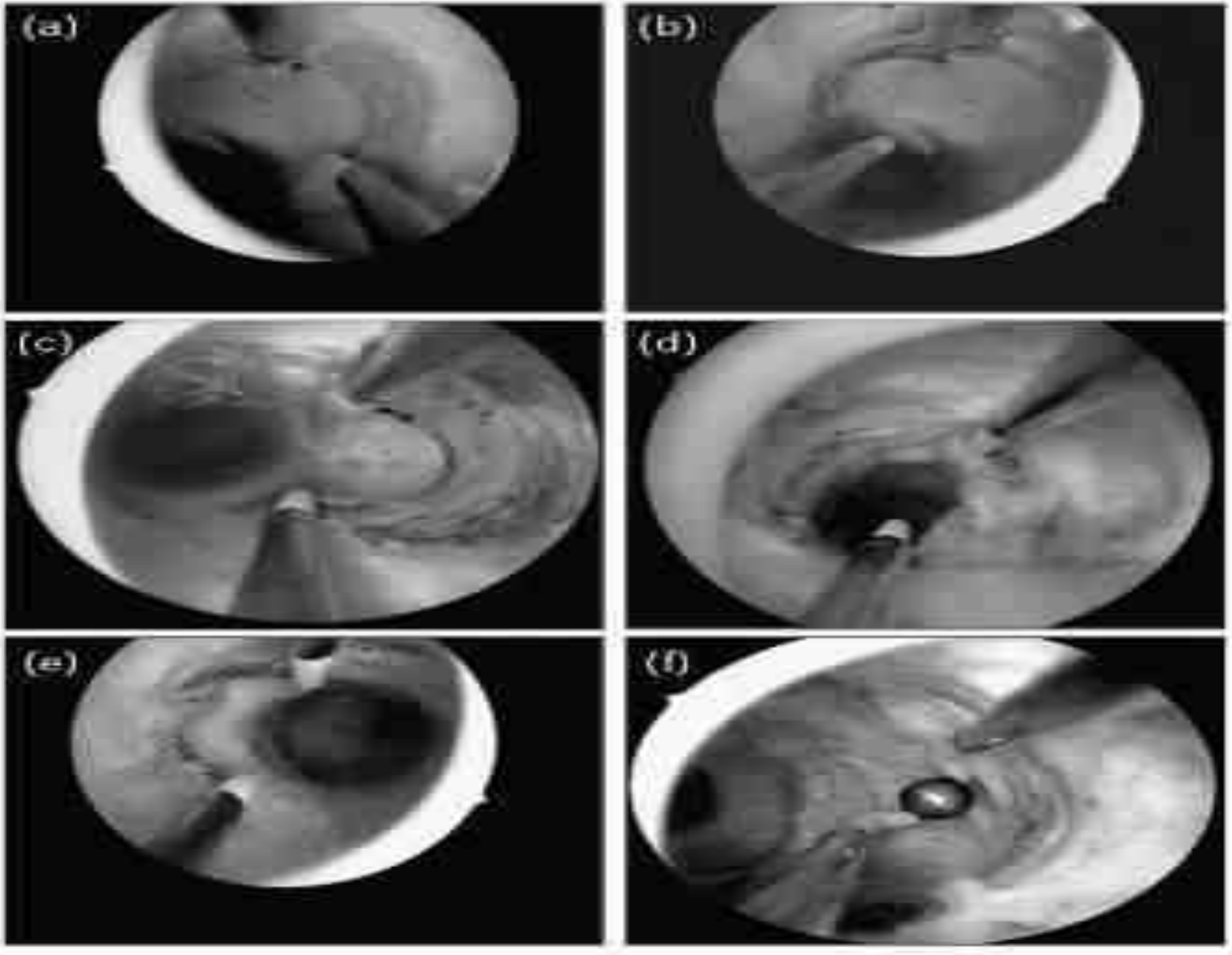
**DISCUSSION:** Large scar defect after cesarean can take shape of a complete absent of the anterior wall of the uterus. No incident has been proved in this condition. There is a lack of data concerning these isthmocele. The experience of hysteroscopic repair cannot be applied to these real large diverticule of the scar cesarean. The results of this study suggest a link between the isthmocele and reversible symptoms after surgery. The first results concerning the subsequent fertility after surgical repair seem interesting

**CONCLUSION:** When a large scare defect (isthmocele) is found in symptomatic woman (pelvic pain, bleeding uterine, infertility), a surgical repair can be proposed, especially for woman who desire a new pregnancy.

**Table 1. Synthesis of data reported in literature regarding the number of patients affected by isthmocele and secondary infertility**

| Author | Type of study | Patients | Follow-up (months) | Control group | Pregnancy | Outcome |
|---|---|---|---|---|---|---|
| Gubbini *et al.*[1] | Prospective | 9 | 12–24 | None | 7 | 7 ECS |
| Fabres *et al.* [5] | Retrospective | 32 | Not applicable | Not applicable | Not known | Not applicable |
| Van Horenbeeck *et al.* [6] | Case-report | 1 | Not known | Not applicable | 1 | 1 preterm delivery |
| Fabres *et al.* [7] | Prospective | 11 | 12–24 | None | 9 | 5 ECS; unknown in 4 |
| Gubbini *et al.* [11••] | Prospective | 41 | 12–24 | None | 41 | 37 ECS; 4 abortions |
| Donnez *et al.* [29] | prospective | 3 | Not indicated | None | 1 | 1 ECS |
| Fernandez *et al.* [30] | Prospective | 4 | 12–24 | None | 2 | Not known |
| Kawakami *et al.* [31] | Retrospective | 13 | Not applicable | Not applicable | Not known | Not applicable |
| Xu *et al.* [32] | Prospective | 1 | 12 | None | 0 | Not known |

ECS, elective cesarean section.


(a)
(b)
(c)
(d)
(e)
(f)

JMIG The Journal of Minimally Invasive Gynecology

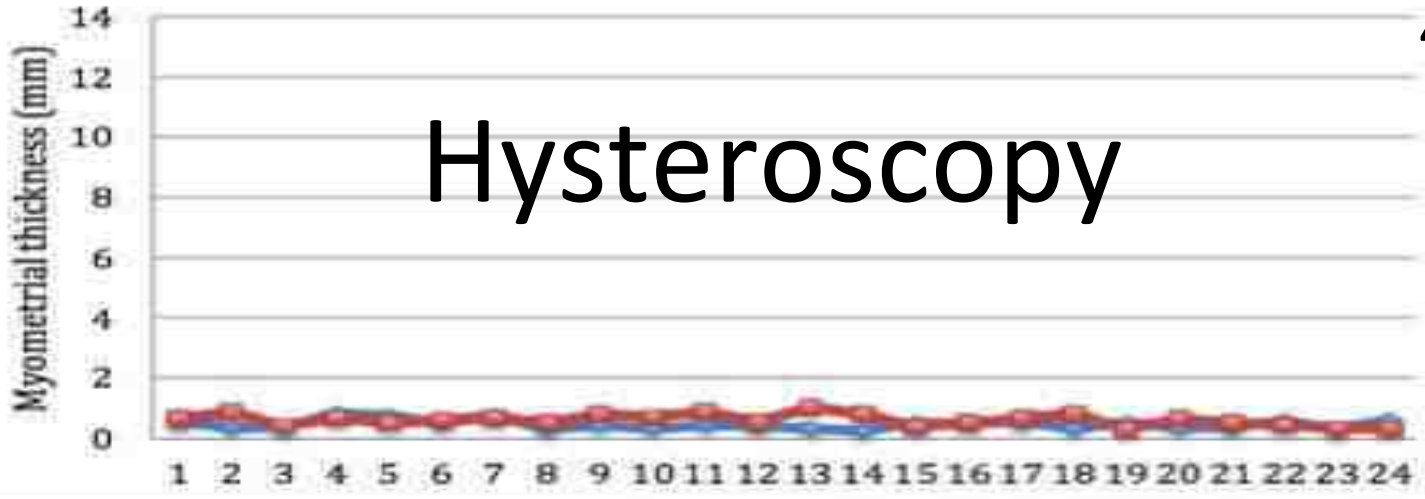


November–December, 2015 Volume 22, Issue 7, Pages 1145–1152



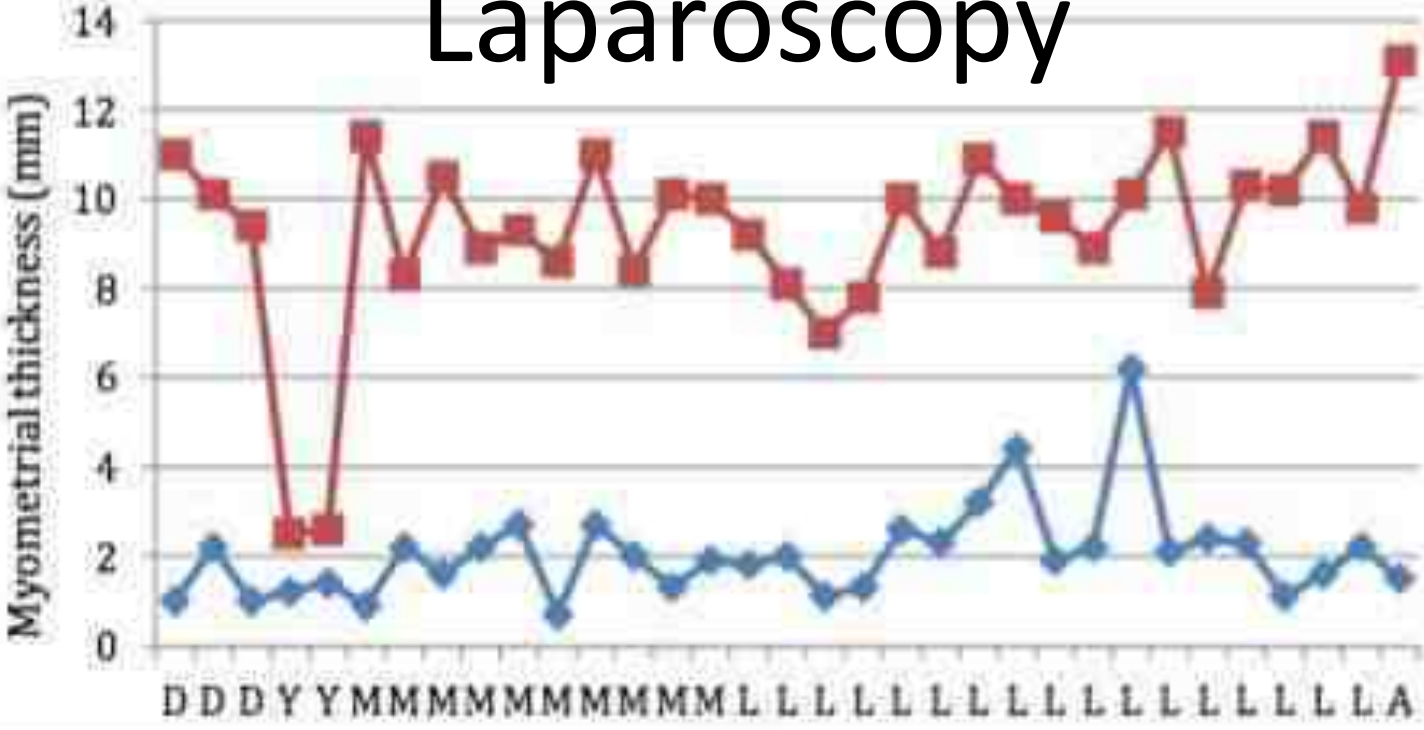
# Should Cesarean Scar Defect Be Treated Laparoscopically? A Case Report and Review of the Literature

Murat Api, MD, PhD, Aysen Boza, MD, Husnu Gorgen, MD, Olus Api, MD




4.4-----5.3 mm

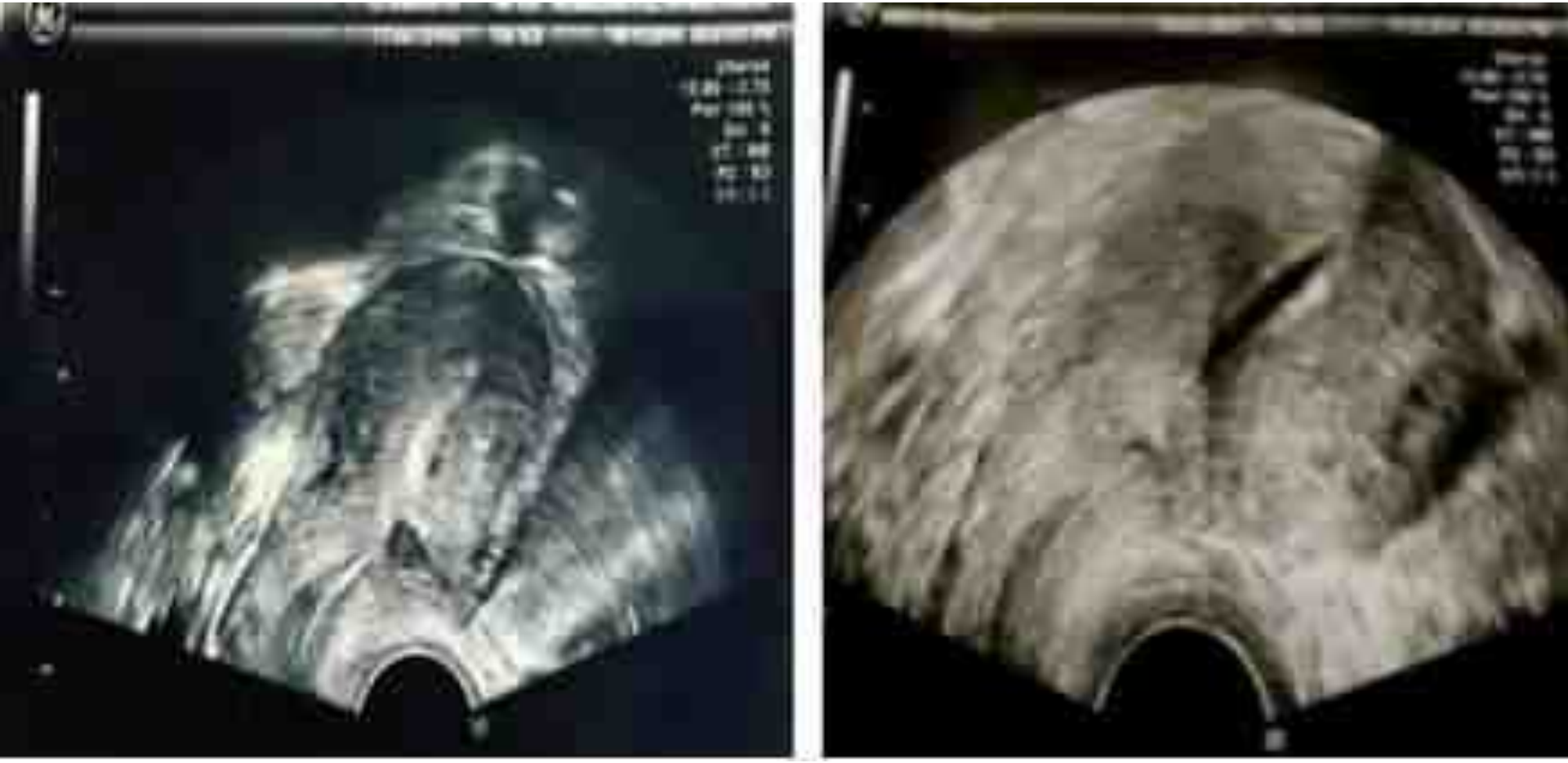
p=0.33




2--------9.8 mm

p<0.001

# Myometrial thickness before and after laparoscopic surgery



1.5 mm → 13.1 mm

Journal of Minimally Invasive Gynecology

Available online 11 February 2016

In Press, Corrected Proof—Note to users

Letter to the Editor

# Author's Response: Which cesarean scar defect should be treated; by which technique and by whom?

Murat Api, MD, PhD

# Thank you