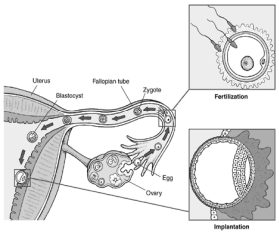
Proximal tubal disease – tubal surgery or IVF

Luciano G. Nardo MD MRCOG
Director, Consultant Gynaecologist and Subspecialist in Reproductive Medicine & Surgery
Manchester, UK

Gyne Health


Gyne Health

Tubal disease is a major cause of infertility and any abnormality often results in impairment of **reproductive performance**



Gyne Health

RBMOnline - Vol 15. No 4. 2007 367-368 Reproductive BioMedicine Online; www.rbmonline.com/Article/3119 on web 16 August 2007

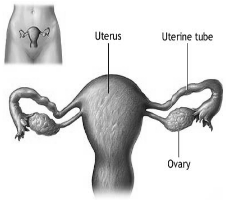
Symposium: Tubal disease and fertility outcome

Guest Editors: Luciano G Nardo, Tin-Chiu Li

Introduction

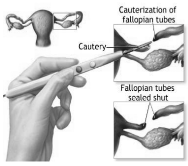
Dr Luciano G Nardo is a Consultant in Gynaecology and Reproductive Medicine at St Mary's Hospital, Manchester. He is an RCOG accredited sub-specialist in reproductive medicine and surgery, and has clinical interests in infertility, assisted reproduction, endometriosis and minimally invasive gynaecological surgery. Dr Nardo has an active research programme focusing on polycystic ovary syndrome, endometriosis, ovarian reserve and mechanisms of embryo implantation. He has published widely on many aspects of reproductive medicine and surgery. Dr Nardo serves on the executive committee of the British Fertility Society and is chairman of the Mediterranean Society for Reproductive Medicine.

The main determinants of tubal disease and prognosis for pregnancy are the ***severity***, the ***anatomical site*** and the ***nature*** of the disease



Types of tubal infertility

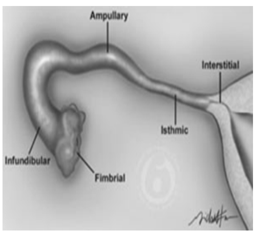
- **Voluntary**



- **Involuntary**

Tubal damage may be:

- proximal
- distal
- involve the entire tube



A classification system of tubal disease

- Describe the extent and the nature of lesions
- Take into account the complexity of any medical or surgical intervention that will be required
- Be of value in predicting the probability of favourable and unfavourable outcomes

Gyne Health

Studies have related prognosis to specific isolated lesions such as:

Tubal damage (Donnez *et al*, 1986)

Mucosal damage (Mage *et al*, 1986)

Adhesions (Oelsner *et al*, 1994)

Gyne Health

PID and Tubal Disease

- 50% of the cases
- Multiple sites tubal damage

- 11% tubal occlusion after x1 PID
- 23% tubal occlusion after x2 PID
- 54% tubal occlusion after x3 PID

Westrom *et al*, 1992

Gyne Health

Other causes of tubal disease

- Fibrosis and endometriosis
- Salpingitis isthmica nodosa
- Cornual polypoidal lesions
- Tubal spasm
- Debris

Gyne Health

Table 2. 'H and R' classification (Rutherford and Jenkins, 2002).

Class	*Name*	*Description*
1	Minor/grade I **70% LBR**	Tubal fibrosis absent even if tube occluded (proximally) Tubal distension absent even if tube occluded (distally) Mucosal appearances favourable Adhesions (peritubal-ovarian) are flimsy
2	Intermediate or moderate/grade II **50% LBR**	Unilateral severe tubal damage (see below) With or without contralateral minor disease 'Limited' dense adhesions of tubes and/or ovaries
3	Severe/grade III **10% LBR**	Bilateral tubal damage Tubal fibrosis extensive Tubal distension >1.5 cm Abnormal mucosal appearance Bipolar occlusion 'Extensive' dense adhesions

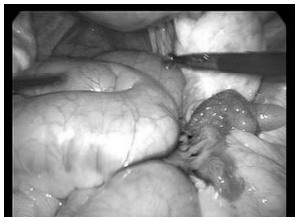
Akande, *RBM Online* 2007

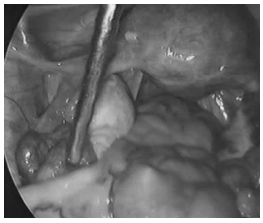
Gyne Health

Accurate diagnosis and assessment is a basic tenet of good medical practice, and determines the selection of appropriate fertility treatment

Gyne Health

Tubal patency





Gyne Health

Table 1. Fallopian tube assessment tests.

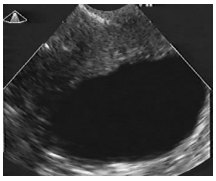
Method of assessment	*Reference*
Transcervical whalebone tubal catheterisation	Smith (1849)
Laparoscopy	Jacobaeus (1910), Palmer (1947)
Hysterosalpingogram	Carey (1914)
Rubin's test: tubal perfusion pressures	
Oxygen	Rubin (1920)
Carbon dioxide	Rubin (1952)
Dye injections with culdoscentecis	Decker (1952)
Injection of phenolsulphonphthalein which, having been absorbed by the peritoneum if the Fallopian tubes were patent, could then be detected in the urine	Speck (1970)
Injection of radiolabelled xenon solution with gamma-camera screening	Pertynski *et al.* (1977)
Selective salpingography and tubal catheterisation	Corfman and Taylor (1966)
Salpingoscopy	Brosens *et al.* (1987)
Falloposcopy	Kerin *et al.* (1990a)
Hystercontrast sonography	Deichert (1993)
Fertiloscopy	Watrelot *et al.* (1999)

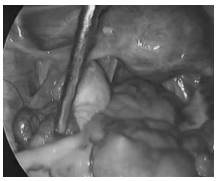
Gyne Health

Table 2. Characteristics of the ideal Fallopian tube assessment test.

Characteristic	*Definition*
Safety	The incidence of any short- or long-term complications
Accuracy	Extent to which the test measures what is supposed to measure (but what is the 'gold standard'?)
Reliability (reproducability)	The degree to which repeated use of the test by the same or different examiners on the same patient produces the same result
Effectiveness (therapeutic potential)	Ability to improve pregnancy rates
Prognostic ability	Ability to inform about the possibility of a post-test pregnancy
Cost	The total cost of the procedure expressed either in monetary terms or in terms of money per live birth, where such information is available

Gyne Health





Gyne Health

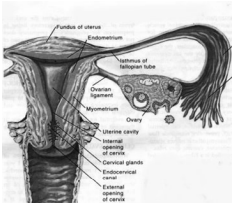
Proximal tubal disease 10-25%

Table 1. Conditions associated with proximal tubal obstruction and their potential to respond to catheterization techniques (adapted from Novy, 1995).

Responds to catheterization?	*Condition*
Frequently	Muscular spasm, stromal oedema, amorphous debris, mucosal agglutination, viscous secretions
Occasionally	Cornual polyps, chronic salpingitis, endometriosis, salpingitis isthmica nodosa, intrauterine synechiae, parasite infection
Never	Lumenal fibrosis, failed tubal re-anastomosis, leiomyomata, congenital stenosis, tuberculosis

Das, Nardo & Seif, *RBM Online* 2007

Gyne Health

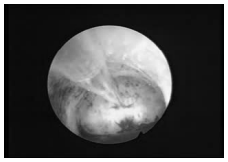


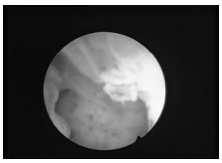
Management options of proximal tubal occlusion in the context of no other infertility factors

- **Microsurgical tubo-cornual anastomosis**
- **Hysteroscopic tubal cannulation**

Gyne Health

Hysteroscopic TC





Gyne Health

Proximal tubal disease: the place for tubal cannulation

Dr Sangeeta Das is currently a senior trainee interest in reproductive medicine. Having work she has published peer-reviewed articles in t She is currently completing the advanced tra

Dr Sangeeta Das

Sangeeta Das[1], Luciano G Nardo[2], Mourad W Seif[1,2]

[1]Academic Unit of Obstetrics and Gynaecology and Reproductive H
[2]Department of Reproductive Medicine, IVF Unit, St Mary's Hospital, M

Table 2. Demographics, success at cannulation and pregnancy outcomes at St Mary's Hospital, Manchester.

Parameter	*Value*
Mean age in years (range)	28 (20–46)
Bilateral block	41/53 (77.4)
Both successfully cannulated	24/41 (58.5)
One tube successfully cannulated	9/41 (22.0)
Neither side cannulated	8/41 (19.5)
Unilateral block (all successfully cannulated)	8/53 (15.1)
Only one tube present (all successfully cannulated)	4/53 (7.5)
Success rate	
Per tube cannulated	69/94 (73.4)
Per patient	36/53 (67.9)
Pregnancy outcomes	12/36 (33.3)
Live birth	7 (19.4)
Ectopic pregnancy	1 (2.8)
Miscarriage	3 (8.3)
Unknown	1 (2.8)
Failed to conceive	24/36 (66.7)
Other fertility treatment	
Ovulation induction	1
Intrauterine insemination	2
IVF	10
Outcome information missing	17/53 (32.1)

Gyne Health

Tubal cannulation is a treatment option in cases of proximal tubal occlusion

NICE guidelines, 2004

- Women of young age (<35 yrs)
- In the absence of other causes of subfertility
- If pregnancy had already occurred
- If surgical skills are available

Gyne Health

Case selection for hysteroscopic tubal cannulation – based upon nature of problem

- Debris
- Cornual polyps
- Peri-cornual synaechiae
- Mucous agglutination

When bilateral proximal tubal blockage was demonstrated by both HSG and Lap & Dye, selective salpingography showed patency in more than 1/3 of case

Woolcott, 1996

Gyne Health

Costs saving

Tubal factor contributes to 36% of all IVF cycles (HFEA, 1998). The estimated cost of IVF is £3000 per cycle in addition to costs of consultation, drugs and investigations (HFEA, 2007) whereas endoscopic tubal cannulation costs the National Health Service approximately £850 per procedure. Lang and Dunaway (1996) have also reported similar savings with tubal cannulation over IVF treatment for all women with proximal tubal occlusion. Costing remains an important issue in a climate when the provision of state funding for IVF remains unresolved.

Das, Nardo & Seif, *RBM Online* 2007

Gyne Health

RBM Online - Vol 10. No 3. 2005 300 Reproductive BioMedicine Online; www.rbmonline.com/Article/1673 on web 10 January 2005

Commentary

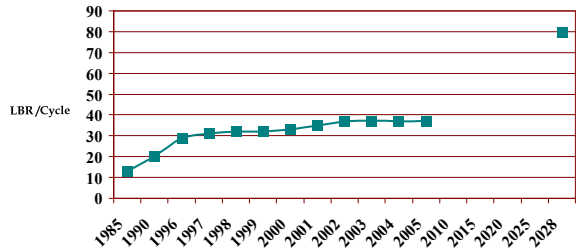
The dilemma of recurrent ectopic pregnancy after tubal surgery and in-vitro fertilization. What to do?

Luciano G Nardo
Department of Reproductive Medicine, St Mary's University Hospital, Manchester M13 0JH, United Kingdom
Correspondence: e-mail: Luciano.Nardo@CMMC.nhs.uk

"If salpingectomy is considered, proximal tubal surgery (i.e., total salpingectomy) should be preferred in women who in future may be referred for IVF. This approach is likely to reduce the risk of recurrent tubal pregnancy"

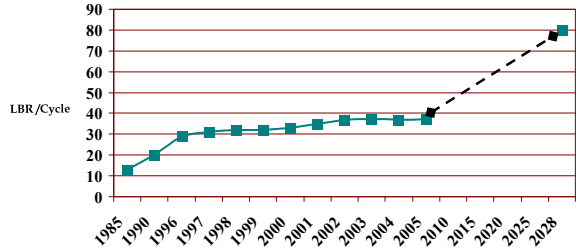
Gyne Health

IVF for Infertility

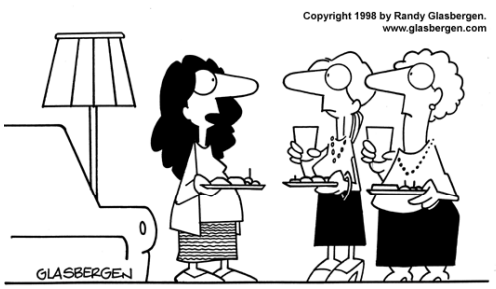


Gyne Health

IVF…Surgery for Infertility



Gyne Health



"My husband and I had to try 70 times before I got pregnant —that was one weekend I'll never forget!"

Gyne Health