


Erasmus MC  
University Medical Center Rotterdam

*Erasmus*

**Microsurgery for male infertility**

GERT DOHLE, MD, Ph.D,  
ERASMUS MC ROTTERDAM



---

---

---

---

---

---

---

---



---

---

---

---

---

---

---

---

**INDICATIONS**

vaso-vasostomy

vaso-epididymostomy

Microsurgical varicocelectomy

Erasmus MC  
*Erasmus*

---

---

---

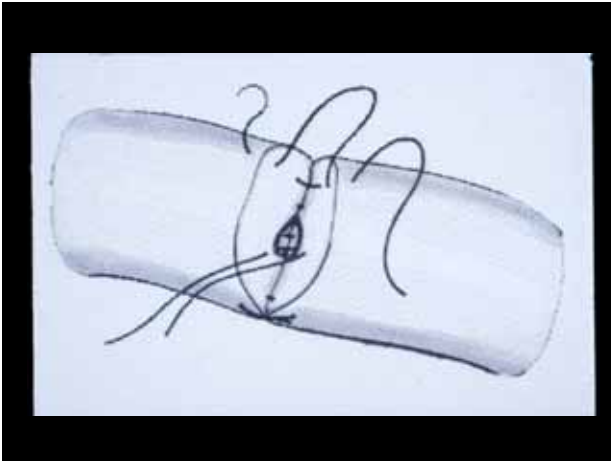
---

---

---

---

---



---

---

---

---

---

---

---

---



---

---

---

---

---

---

---

---

**CAUSES OF OBSTRUCTIVE AZOOSPERMIA**

- **CONGENITAL FORMS**
  - CONGENITAL BILATERAL ABSENCE OF THE VAS DEFERENS
  - EPIDIDYMAL BLOCKAGE/YOUNG'S SYNDROME
  - EJACULATORY DUCT OBSTRUCTION/MULLERIAN CYSTS
- **AQUIRED FORMS**
  - POST-VASECTOMY
  - POST-INFECTIVE
  - POST-SURGERY (HYDROCELE, HERNIA REPAIR)

Erasmus MC  
*Erasmus*

---

---

---

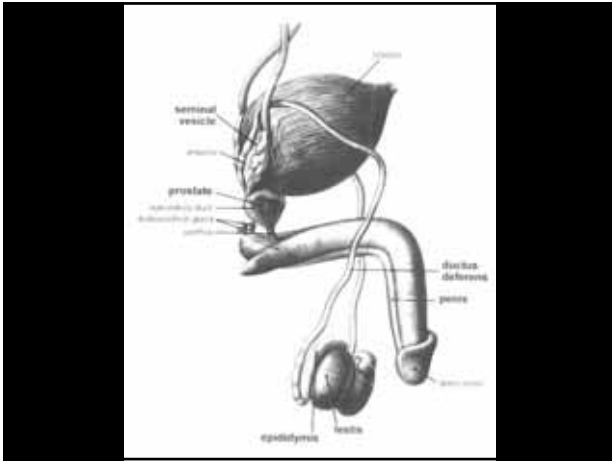
---

---

---

---

---



---

---

---

---

---

---

---

---



---

---

---

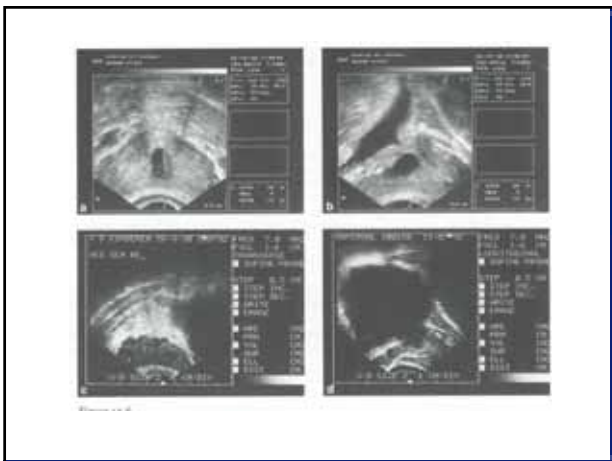
---

---

---

---

---



---

---

---

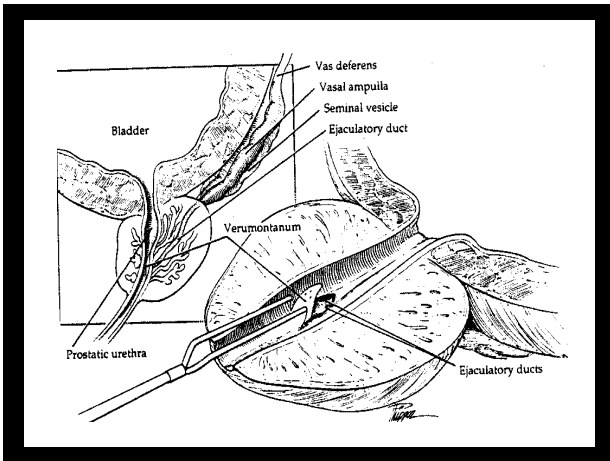
---

---

---

---

---




---



---



---



---



---



---



---




---



---



---



---



---



---



---




---



---



---



---



---



---



---

## VASO-VASOSTOMY

IN WESTERN-EUROPE 15% OF THE MALE POPULATION WILL HAVE A VASECTOMY FOR DEFINITIVE BIRTH CONTROL

ABOUT 10% WILL REGRET THIS PROCEDURE AFTERWARDS

IN 2-6% A VASECTOMY REVERSAL IS PERFORMED

MAIN REASONS:

NEW RELATIONSHIP (96%)

MORE CHILDREN DESIRED IN THE SAME RELATIONSHIP

PAIN/PSYCHOGENIC PROBLEMS

Erasmus MC  
*Erasmus*

---

---

---

---

---

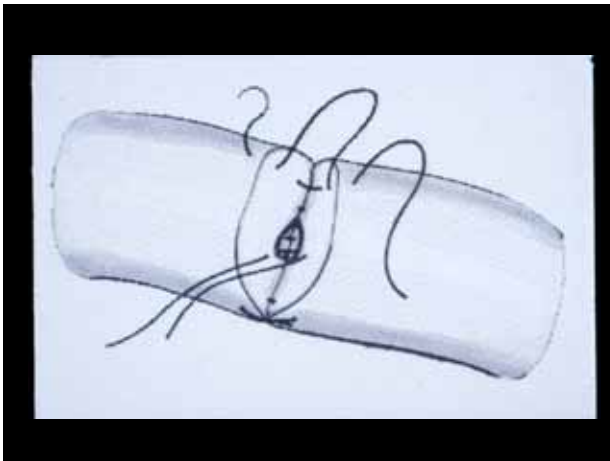
---

---

---

---

---



---

---

---

---

---

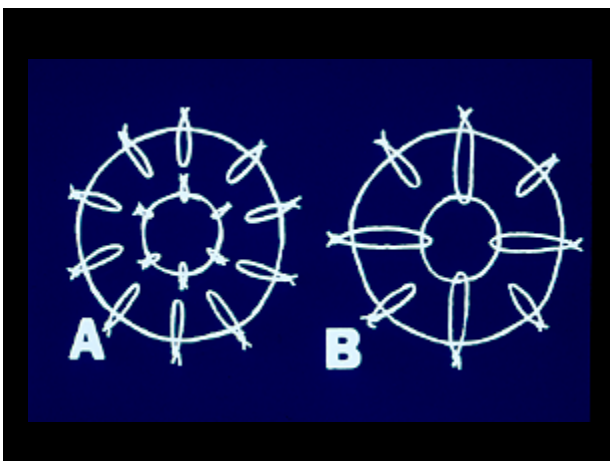
---

---

---

---

---



---

---

---

---

---

---

---

---

---

---



---

---

---

---

---

---

---

---



---

---

---

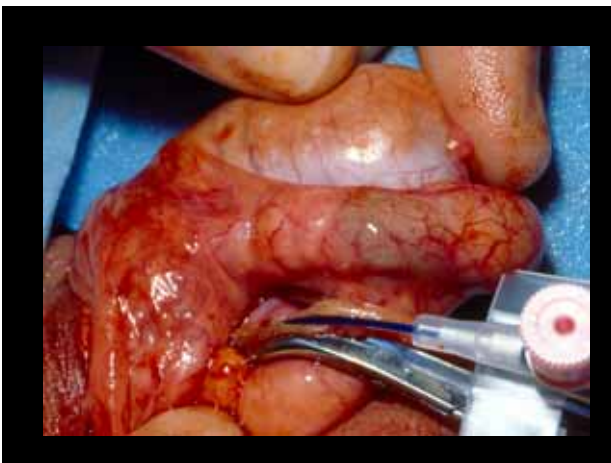
---

---

---

---

---



---

---

---

---

---

---

---

---



---

---

---

---

---

---

---

---



---

---

---

---

---

---

---

---



---

---

---

---

---

---

---

---



---

---

---

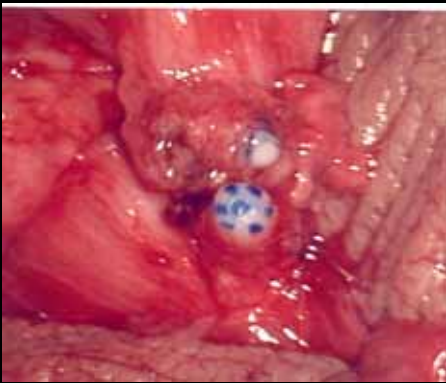
---

---

---

---

---



---

---

---

---

---

---

---

---



---

---

---

---

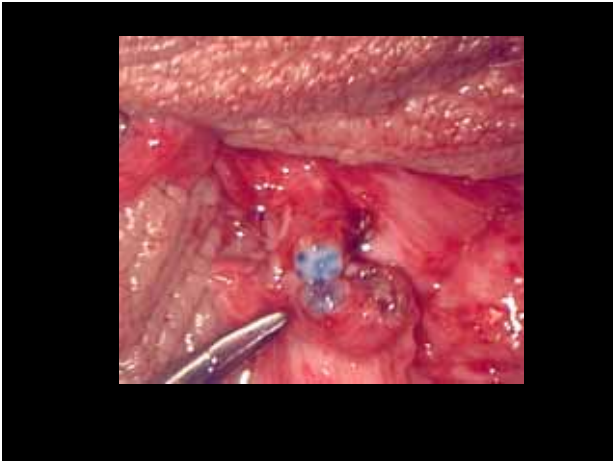
---

---

---

---





---

---

---

---

---

---

---

---



---

---

---

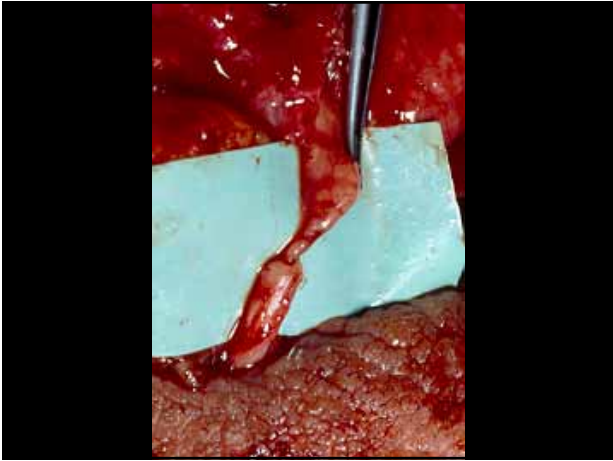
---

---

---

---

---



---

---

---

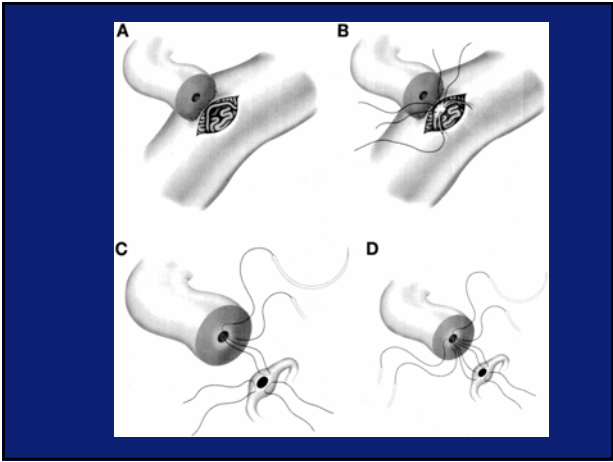
---

---

---

---

---




---



---



---



---



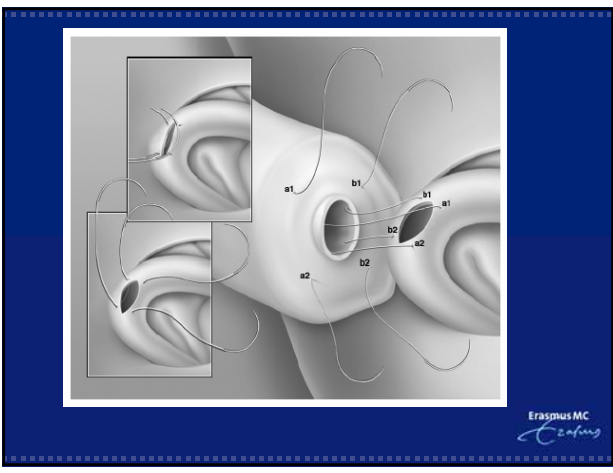
---



---



---



Erasmus MC  
*Erasmus*

---



---



---



---



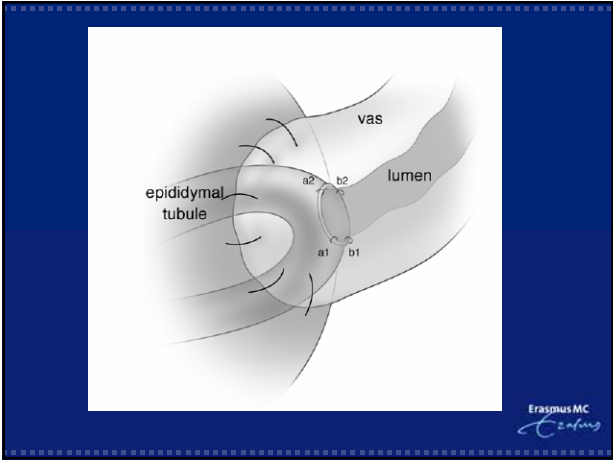
---



---



---



Erasmus MC  
*Erasmus*

---



---



---



---



---



---



---

## STUDY

From 1998 to 2002 a modified one-layer VVS was performed in 223 men.

Semen analysis was performed after 3 and 6 months (WHO-criteria)

The results of spontaneous pregnancies and assisted reproductive techniques were evaluated by questionnaires.



---

---

---

---

---

---

---

---

	Percentage	pregnancy (%)	No pregnancy (%)
Normal sperm count	22%	65%	35%
Mild oligospermia	37%	33%	67%
severe oligospermia	18%	13%	87%
Azoospermia	23%	-	100%
Motility < 10%	42%	40%	60%



---

---

---

---

---

---

---

---

## RESULTS (1)

A correlation was found between the obstructive interval and the spontaneous pregnancy rate (Fig.1)

After an interval < 10 years patency was found in 84% and pregnancy in 50%.

After an interval > 10 years patency was found in 66% and pregnancy in 23%.



---

---

---

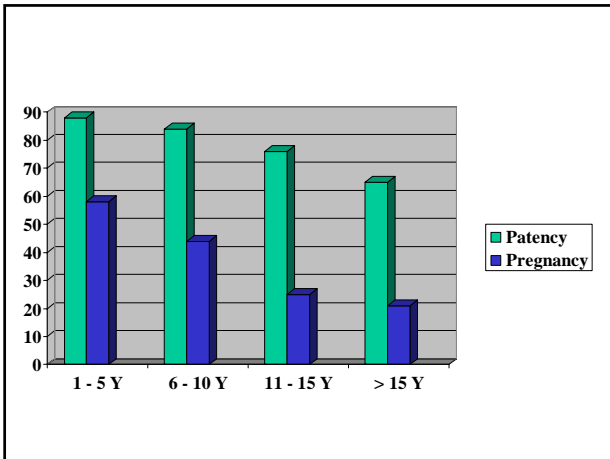
---

---

---

---

---




---

---

---

---

---

---

---

---

---

---

TABLE 2: results of the sperm count, sperm progressive motility and antisperm antibody (MAR) test according to the length of the obstructive interval between vasectomy and reversal.

SPERM COUNT	< 1.0 MILL./ML. (%)	1.0-20 MILL./ML. (%)	> 20 MILL./ML. (%)	< 10% MOTILITY (%)	MAR-TEST POS. (%)
OBSTRUCTIVE INTERVAL < 10 YEARS	8/62 (12.9)	34/62 (54.8)	20/62 (32.3)	9/30 (30.0)	29/41 (70.7)
OBSTRUCTIVE INTERVAL > 10 YEARS	14/77 (18.2)	42/77 (54.5)	21/77 (27.3)	25/46 (54.3)	18/31 (58.1)
Student's T-test (P-value)	N.S.	N.S.	N.S.	P = 0.025	N.S. (P=0.49)

---

---

---

---

---

---

---


---

---

---

**RESULTS ART**

Assisted reproduction (IUI,IVF,ICSI) was performed in couples with patency, but without spontaneous pregnancy and resulted in 20% ongoing pregnancies per couple

Erasmus MC 

---

---

---

---

---

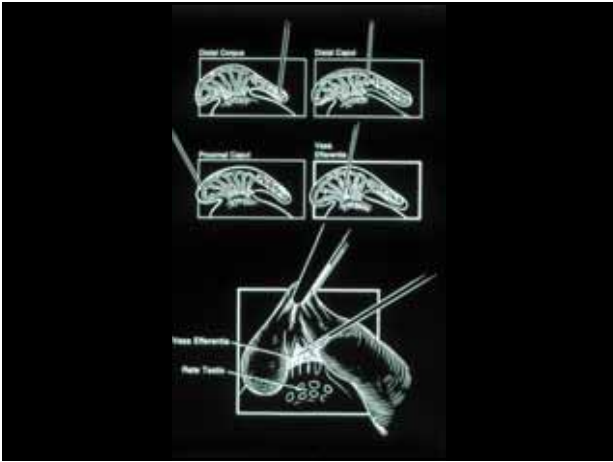
---

---

---

---

---




---

---

---

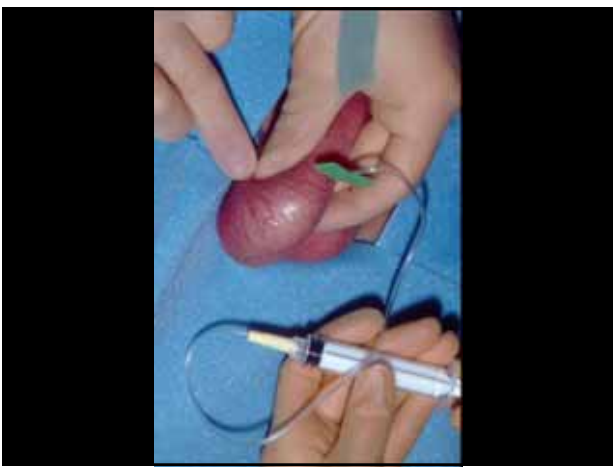
---

---

---

---

---




---

---

---

---

---

---

---

---

TESTICULAR SPERM  
EXTRACTION (TeSE)

MICRO-TeSE

**Microdissection TB vs. Conventional TB**

5 -15 mg

>500 mg

© 1998 David M.D.P. for all rights reserved

---

---

---

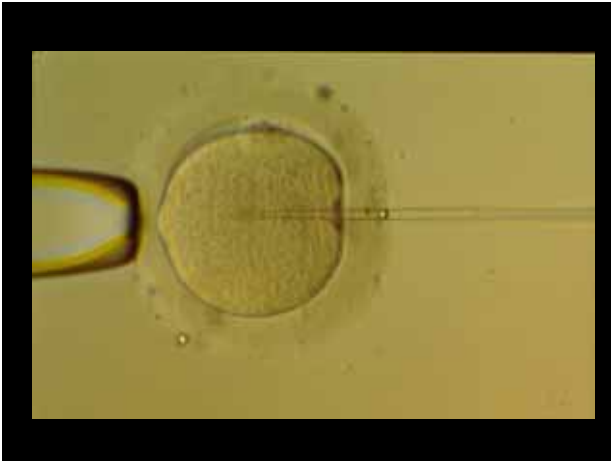
---

---

---

---

---



---

---

---

---

---

---

---

---

**RESULTS (2) PARTNER'S AGE**

The age of the partner as a prognostic factor:  
33 men had a partner > 36 years  
Spontaneous pregnancy occurred in 8/36 (20%)

Erasmus MC  
Erasmus

---

---

---

---

---

---

---

---

**RESULTS ART (1) (data from Tournaye H.)**

In Brussels MESA or TESE with ICSI was performed in couples after failed VVS in men with female partners >36 years.

The mean age of the partners was 39,2 years.

129 cycles resulted in 21 deliveries (16,2% per cycle)

Erasmus MC  
Erasmus

---

---

---

---

---

---

---

---

**COST IN EURO 'S FOR A VASOVASOSTOMY (vvs) PROCEDURE AND A MESA/TESE AND ICSI PROCEDURE**

	VVS	MESA/TESE and ICSI
Cost/delivery, DM	3,610.40	3,610.40
Twins (% × 5,718 DM)	40.03	1,143.79
Triplets (% × 6,530 DM)	6.53	130.61
Cost/VVS, DM	1,800	–
Cost/MESA or TESE, DM	–	720
Cost/ICSI cycle, DM	–	5,800
4 cycles/1 life newborn, DM	–	17,400
Total costs, DM	5,447.06	28,804.80
Euro	2,793.36	14,547.88

From: Heidenreich A, Altmann P, Engelmann UH. Eur Urol 2000 37:609-14




---

---

---

---

---

---

---

---

---

---

---

---

**VASECTOMY REVERSAL OR ICSI**

The results of the VVS procedure are depending mainly on the duration of the obstructive interval between vasectomy and reversal and the age of the female partner.

After an interval >10 years progressive loss of semen quality is found after VVS, especially loss of sperm motility.

ICSI with surgically retrieved spermatozoa after vasectomy in men with partners > 36 years does not result in more pregnancies compared to VVS.




---

---

---

---

---

---

---

---

---

---

---

---




---

---

---

---

---

---

---

---

---

---

---

---