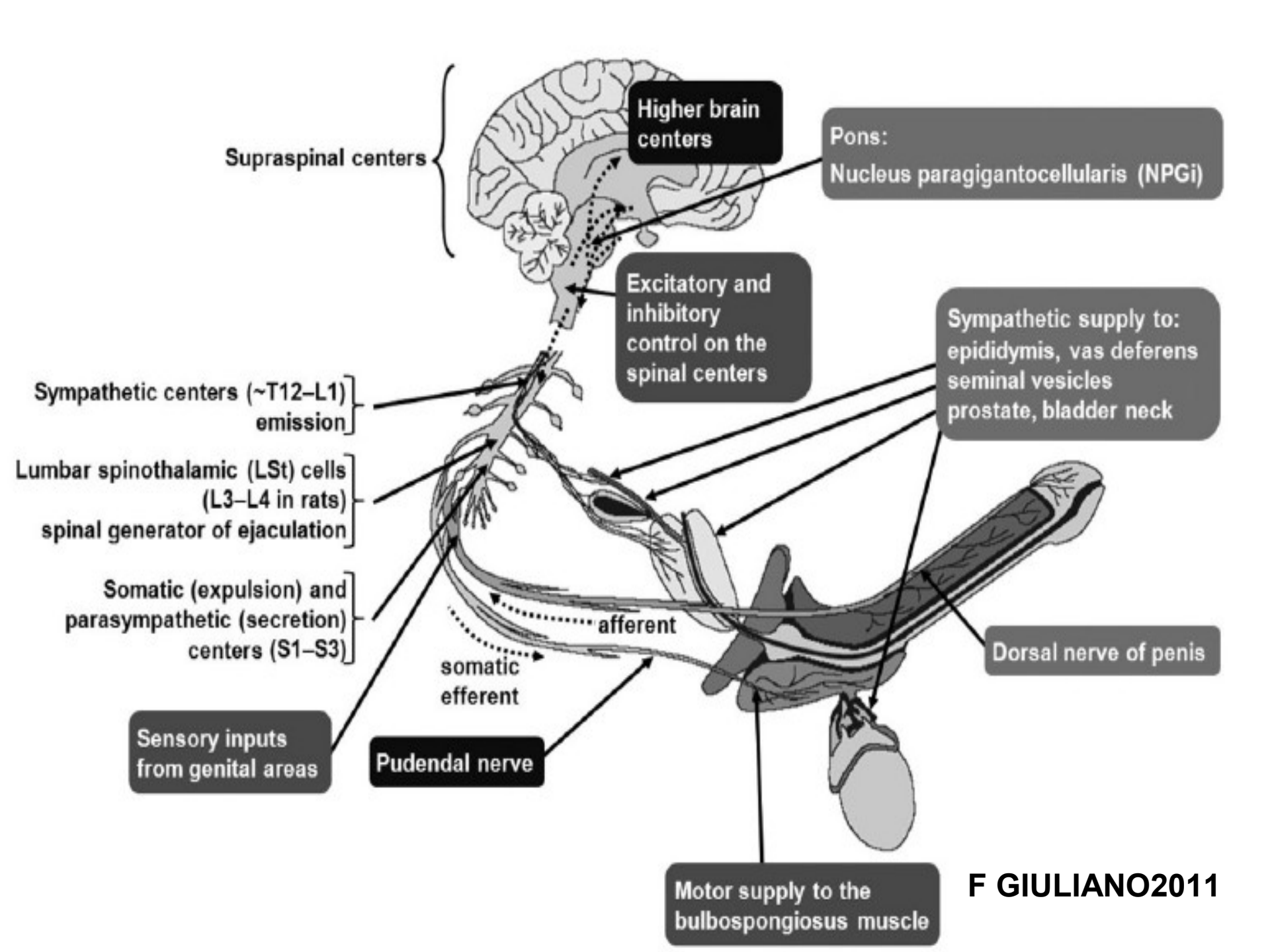
PRISE EN CHARGE DES TROUBLES DE L'EJACULATION

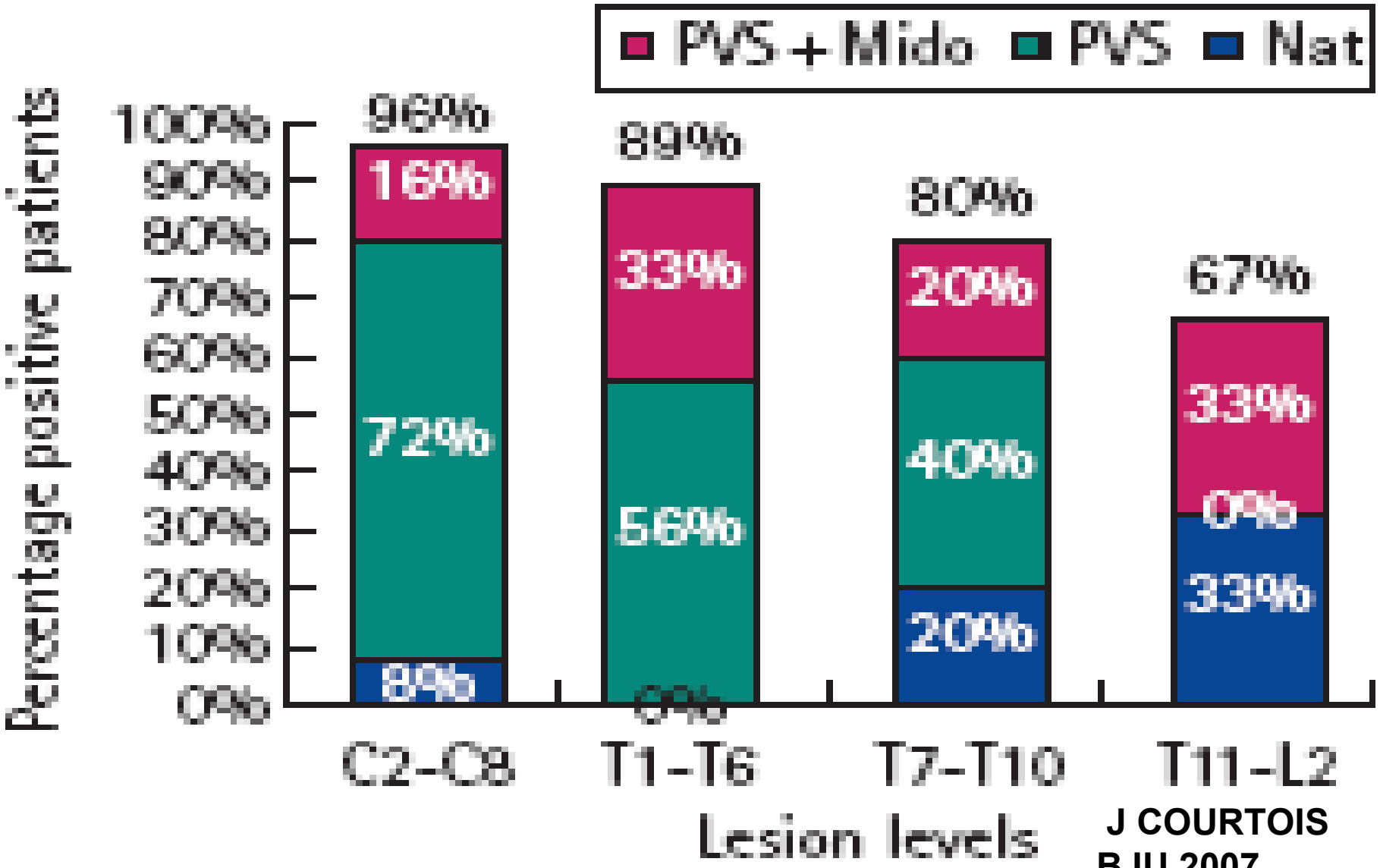
DR RIGOT
SERVICE D'ANDROLOGIE CHRU LILLE

GARCHES LE 30 11 2012


Supraspinal centers
Higher brain centers
Pons:
Nucleus paragigantocellularis (NPGi)
Excitatory and inhibitory control on the spinal centers
Sympathetic supply to: epididymis, vas deferens seminal vesicles prostate, bladder neck
Sympathetic centers (~T12–L1) emission
Lumbar spinothalamic (LSt) cells (L3–L4 in rats) spinal generator of ejaculation
Somatic (expulsion) and parasympathetic (secretion) centers (S1–S3)
afferent
somatic efferent
Dorsal nerve of penis
Sensory inputs from genital areas
Pudendal nerve
Motor supply to the bulbospongiosus muscle
F GIULIANO2011

- Affections cérébrales: ?
- Myélites inflammatoires: 30%
- Neuropathies périphériques : 30 %
- Traumatismes médullaires: 80%

PERCENTAGE SCI PATIENTS REACHING EJACULATION



J COURTOIS
BJU 2007

REF: HIRSCH IH 1991/BT/SCI	PATIENTS	NORMAL	ARRET MATURATION	FIBROSE	ATROPHIE
BORS	34	3	2	7	22
HORNE	7	2	4		1
STEMMERMANN	16	6	10		
TSUJI	34	10			
LERICHE	57	28			
KIKUCHI	2	1	1		
MORLEY	7	4			
PERKASH	13	6	7		
TOTAL	170	60-35%	24-14%	7	23-14%

SEMEIOLOGIE DIFFICILE

- Anéjaculation anorgasmique :il ne se passe rien
- Ejaculation asthénique :éjaculation sans « plaisir »
- Ejaculation rétrograde :orgasme (?) sans éjaculation avec la recherche de spermatozoïdes dans les urines à défaut de fructose

LE BILAN

- Clinique :
- Hormonal: Testostérone ,FSH
- Morphologique :Echographie Génito-urinaire
- Génétique ?
- Bilan neuro-urologique pour optimiser au mieux l'état général et la spermatogénèse

SI PROJET DE PARENTALITE TOUJOURS TENIR COMPTE DE L'AGE DE LA COMPAGNE,DE SA FERTILITE POTENTIELLE

L'AUTOCONSERVATION DE SPERME EST LA PRIORITE DES PRIORITE

DEVANT L'APPARITION D'UNE DYSEJACULATION
DES QUE CELA PARAIT POSSIBLE CHEZ LES BLESSES MEDULLAIRES

COMMENT

- Recueil : idem spermogramme (avec préparation possible sur le sperme urinaire)
- Congélation :milieu cryo protecteur

  - 196 °

  pas d'altération
- Qualité ?
- Paille-test ?
- I I U > F I V > I C S I

LE SPERMOGRAMME

- Laboratoire agréé pour les inséminations et la congélation
- Conditions de réalisation
- 2 à au moins 3 mois d'intervalle
- Expliquer la variabilité des résultats

TMS OU GRADIENT DE DENSITE

- Récupération du culot après lavage et centrifugation
  = Fraction la plus mobile des spermatozoïdes
- Remise du culot dans du Ferticult
- Evaluation CONCENTRATION ++ spermatozoïdes :
  Evaluation MOBILITE (« a + b ») ++
- Réévaluation TERATOSPERMIE si besoin
- Evaluation mob. totale persistante

IAC POSSIBLE SI > 1 million et survie à 24 h ⊕

GUIDE DES BONNES PRATIQUES EN AMP J.O 2010

CONDITIONS

- Seul l'homme qui a déposé le sperme et lui seul
- Conditions ?
  * Sérologies obligatoires
  * Lettre du médecin avec la nature du traitement Le plutôt possible dans l'évolution de la maladie neurologique...
- Traitement stérilisant : 100 % pris en charge par S.S. pendant 3 ans
- Sinon, 50 Euros / an renouvelable par lettre sauf souhait de destruction

Les modalités de prise en charge

- Pas de prise en charge en dehors de la fertilité ou de sa préservation:
- Pas de médication avec l'AMM
- Les médications utilisées ont des effets secondaires :

soit généraux (HTA,..)

soit vésicaux-sphinctériens

Author's recommendations for sympathomimetic dosing regimens

Ephedrine sulfate, 25 mg orally twice a day[a]

Imipramine hydrochloride, 25 mg orally three times a day[a]

Midodrin hydrochloride, 7.5 mg orally, titrated to a maximum of 30 mg[b]

Pseudoephedrine hydrochloride, 120 mg orally twice a day[a]

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[a] All regimens are recommended for 7 days before ovulation or anticipated time of donation.

[b] Recommended regimen up to 120 minutes before attempts at penile vibratory stimulation.

D OHL 2008

LES TECHNIQUES DE RECEUIL

- Si l'éjaculation est présente:
  - Le rapport sexuel +/- programmé
  - La masturbation et insémination+/-médicalisée

- Si l'éjaculation est absente:
  - La masturbation debout vessie pleine
  - Optimiser l'érection
  - Techniques spécifiques de déclenchement
  - En dernier recours le prélèvement chirurgical

LE MASSAGE PROSTATIQUE

TABLE 1

Results of assisted reproduction using spermatozoa obtained by ampullary, seminal vesicle, and prostatic massage.

Patient no.	Age (y)	Age of spouse (y)	Cause of anejaculation	Expressed fluid				ART procedure	Outcome
				Volume (mL)	Sperm concentration ($\times 10^6$/mL)	Sperm motility (%)	Abnormally shaped sperm (%)		
1	32	32	Diabetes mellitus	1	1	6	40	IVF × 3; ICSI × 2	Delivered a girl
2	35	29	RPLND	0.5	200	10	43	ICSI × 3	Delivered a girl
3	36	36	RPLND	0.3	20	13	30	IUI × 5; ICSI × 2	No pregnancy
4	34	37	RPLND	0.5	15	5	55	ICSI × 3	No pregnancy
5	35	30	RPLND	0.6	22	13	80	ICSI × 4	Delivered twins (boy/boy)
6	33	32	RPLND	1	3	10	75	ICSI × 2	Delivered a boy
7	30	29	RPLND	0.7	10	5	45	IVF × 4; ICSI × 2	Delivered a boy
8	38	31	RPLND	0.5	25	11	65	ICSI × 1	Spontaneous abortion
9	33	30	Psychogenic anejaculation	0.3	100	6	48	IVF × 3; ICSI × 1	Delivered twins (girl/girl)
10	39	37	Psychogenic anejaculation	0.3	300	1	30	ICSI × 1	Delivered a boy

Note: ART = assisted reproductive technology; IUI = intrauterine insemination.

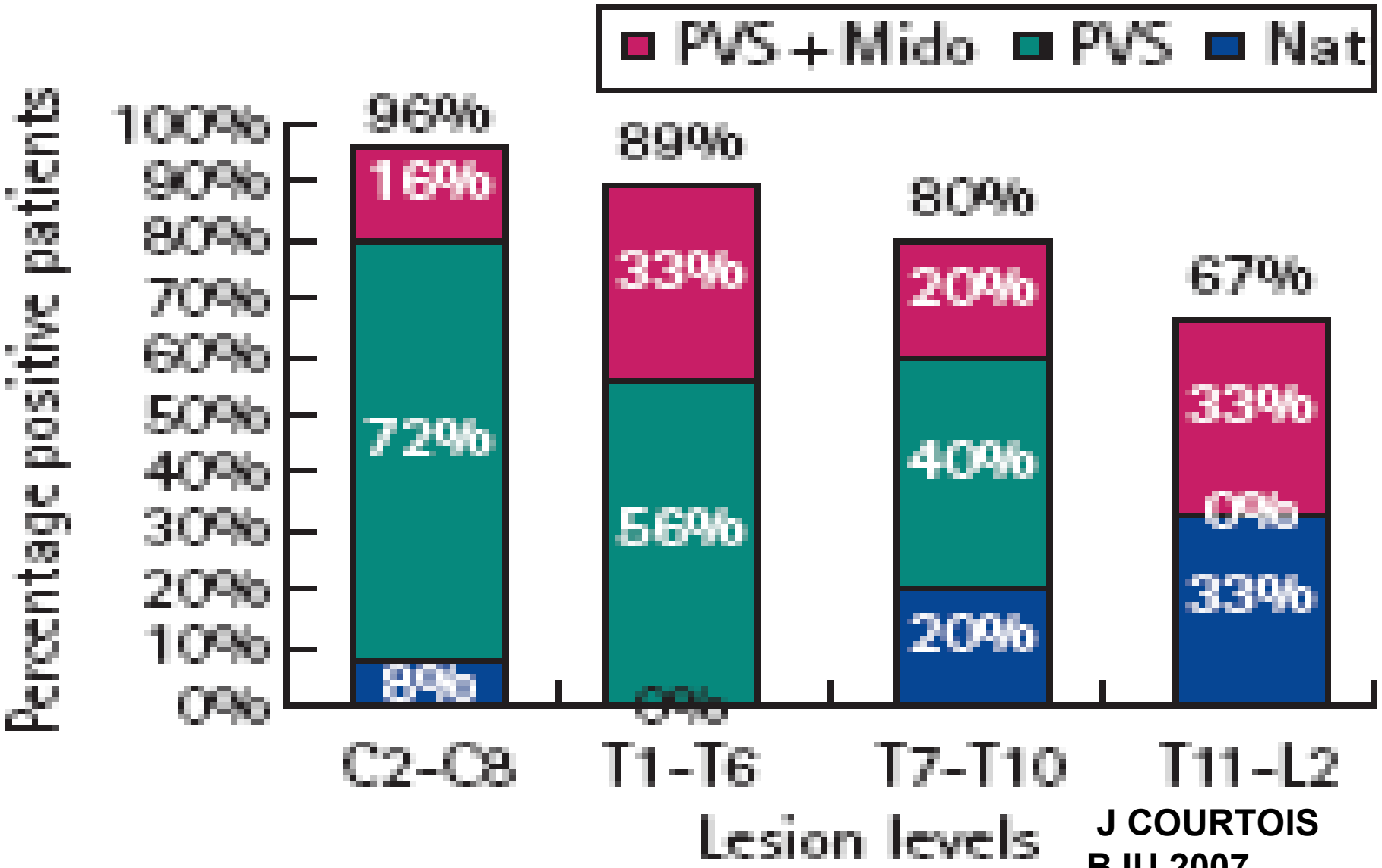
Okada. Obtaining spermatozoa by prostatic massage. Fertil Steril 2001.

LE VIBROMASSEUR

- Fréquence 100hz/Amplitude 2,5mm
- Seul ou associé à la midodrine(Gutron)
- Adapter en fonction des infections, de la spasticité, de l'âge ,de la période de vie


FERTI CARE personal
penile vibrator
DENMARK
CE
0301
OVERLOAD

PERCENTAGE SCI PATIENTS REACHING EJACULATION



J COURTOIS
BJU 2007

TABLE 2. *Ejaculation type and midodrine dose in each group*

	Overall	Group 1	Group 2	Group 3	Group 4	p Value
No. pts:		55	51	24	28	
No. ejaculation:	102	34	25	11	22	0.09
AE		19	24	6	8	0.16
AE + RE		8	4	1	0	
RE		7	7	4	14	
Mean ± SD midodrine (mg):		16.4 ± 7.2	19.2 ± 6.5	21.0 ± 6.0	20.0 ± 7.4	Group 1 vs 3 significant
Success	102	15.4 ± 6.5	17.4 ± 5.8	21.8 ± 6.2	20.0 ± 8.2	Group 1 vs 3 significant
Failure	56	18.0 ± 8.2	23.1 ± 6.4	20.4 ± 6.0	20.0 ± 3.9	0.18

TABLE 3. *Cardiovascular parameters at rest and during PUS*

	Mean ± SD Group 1 (mm Hg)		Mean ± SD Group 2 (mm Hg)		Mean ± SD Group 3 (mm Hg)		Mean ± SD Group 4 (mm Hg)	
	Baseline	Midodrine	Baseline	Midodrine	Baseline	Midodrine	Baseline	Midodrine
SBP:								
At rest	117.6 ± 9.8	128.2 ± 10.6	123.1 ± 8.8	130.0 ± 8.9	118.7 ± 8.5	125.6 ± 13.9	121.0 ± 9.2	128.1 ± 10.3
On PVS	161.9 ± 21.8	189.2 ± 25.1	163.6 ± 17.2	173.7 ± 23.7	148.3 ± 26.1	155.5 ± 30.4	140.2 ± 20.2	150.1 ± 25.9
DBP:								
At rest	63.8 ± 8.2	71.1 ± 9.8	67.5 ± 8.0	71.8 ± 8.3	66.5 ± 7.9	70.5 ± 11.1	67.0 ± 8.1	72.3 ± 10.2
On PVS	94.8 ± 10.1	99.8 ± 8.8	87.0 ± 10.2	94.6 ± 11.1	81.0 ± 13.6	84.2 ± 16.2	79.0 ± 12.8	84.3 ± 14.0
MAP:								
At rest	90.7 ± 7.9	99.7 ± 9.6	95.3 ± 7.7	100.9 ± 8.0	92.6 ± 7.4	98.1 ± 11.4	94.0 ± 8.3	100.2 ± 10.2
On PVS	138.4 ± 14.6	144.5 ± 15.9	125.3 ± 12.8	134.1 ± 16.6	113.6 ± 19.4	119.9 ± 22.6	109.6 ± 16.2	117.2 ± 19.3
HR:								
At rest	71.7 ± 6.3	67.2 ± 8.5	75.6 ± 7.0	70.0 ± 7.4	74.6 ± 7.2	70.1 ± 8.2	76.8 ± 6.7	71.9 ± 7.4
On PVS	60.1 ± 6.6	53.7 ± 13.0	68.0 ± 6.6	56.0 ± 7.5	70.8 ± 8.9	61.7 ± 7.5	74.6 ± 8.5	63.3 ± 10.9

Significant difference in baseline vs midodrine in each group.

PREVINAIRE JG J UROL 2007

TABLE II. *Semen parameters compared between various potential prognostic groups (Data are reported as mean ± SD)*

Parameters	n	Volume (mL)	Total Count (Millions)	Motility (%)	Total Motile Count (Millions)	Normal Morphology (%)
Time since lesion						
<1 year	19	1.9 ± 1.3	191 ± 232	16 ± 16.9	41 ± 76	64 ± 127.8
>1 year	32	1.9 ± 1.6	615 ± 1925	11 ± 13.2	38 ± 84	41 ± 120.7
<5 years	30	1.9 ± 1.4	580 ± 1985	13 ± 15.4	33 ± 66	56 ± 130.0
>5 years	21	1.8 ± 1.7	281 ± 360	12 ± 14.1	48 ± 99	41 ± 15.9
Injury specifics						
Cervical	32	2.2 ± 1.7	668 ± 1910	16 ± 15.9*	56 ± 96	55 ± 23.2
Thoracic	19	1.4 ± 0.9	101 ± 248	7 ± 10.7*	11 ± 130	41 ± 128.8
At/above T-6	41	2.1 ± 1.6	559 ± 1701	15 ± 15.1*	49 ± 88	52 ± 24.6
Below T-6	10	1.1 ± 0.6	40 ± 68	3 ± 7.2*	0.5 ± 1.4	42 ± 30.7
Complete	34	2.0 ± 1.6	246 ± 413	10 ± 11*	30 ± 59	51 ± 27.5
Incomplete	17	1.5 ± 1.3	879 ± 2596	19 ± 19.2*	57 ± 113	49 ± 23.8
Bladder management						
Noncatheter	33	2.1 ± 1.7	674 ± 1882	13 ± 14.8	52 ± 95	47 ± 22.0
Catheter	18	1.4 ± 0.9	59 ± 115	12 ± 15.1	16 ± 35	55 ± 32.3

* $P < 0.05$, unpaired t test.

D OHL 1996

Vibratory ejaculation in 140 spinal cord injured men and home insemination of their partners

J Sønksen[1], M Fode[1], D Löchner-Ernst[2] and DA Ohl[3]

Study design: Retrospective cohort study.

Objectives: Anejaculation is commonly found in spinal cord injured (SCI) men. Clinical treatments and assisted reproductive techniques allow SCI men to father children but few home pregnancies have been reported. The objective of this paper is to evaluate the results from the last 20 years' of treatment with penile vibratory stimulation (PVS) and vaginal self-insemination at home in SCI men and their partners.

Setting: The data originate from two European centers and one American center.

Methods: A total of 140 SCI men with anejaculation and their healthy partners were available for this analysis. Men who obtained antegrade ejaculation by PVS and had motile sperm in the ejaculate were offered the possibility of PVS combined with vaginal self-insemination at home. Couples were instructed to perform PVS and to instill the ejaculate intravaginally. Outcome measures were pregnancy rate per couple, number of live births, total motile sperm count and time to pregnancies.

Results: Median total motile sperm count was 29 million (range, 1–92 million). In all, 60 of the 140 couples (43% pregnancy rate) achieved 82 pregnancies. Seventy-two of the pregnancies resulted in live births with the delivery of 73 healthy babies. Median time to first pregnancy was 22.8 months (6.0–98.4). No complications were reported.

Conclusion: PVS combined with vaginal self-insemination may be performed as a viable, inexpensive option for assisted conception in couples in whom the SCI male partner has an adequate total motile sperm count and the female partner is healthy.

Spinal Cord (2012) **50**, 63–66; doi:10.1038/sc.2011.101; published online 13 September 2011

ELECTRO-EJACULATION

TABLE 1. *Basic semen parameters in electroejaculation and penile vibratory stimulation specimens*

	Mean ± SD	
	Electroejaculation	Penile Vibratory Stimulation
Antegrade specimen:		
Total sperm count (millions)	764.4 ± 862.7	537.8 ± 384.1
Motility (%)	10.7 ± 14.2*	26.0 ± 17.9*
Total motile sperm count (millions)	97.2 ± 110.7*	185.0 ± 151.8*
Morphology (% normal)	18.5 ± 19.0	24.3 ± 19.5
Retrograde specimen:		
Total sperm count (millions)	822.5 ± 1,794.6	41.4 ± 66.2
Motility (%)	6.2 ± 9.3	6.0 ± 8.5
Total motile sperm count (millions)	112.3 ± 279.7	6.0 ± 11.0
Combined sperm counts (millions):		
Total	1,586.9 ± 2,496.9	579.2 ± 404.3
Total motile	209.5 ± 324.6	191.0 ± 156.0

TABLE 2. *Functional characteristics of electroejaculation and penile vibratory stimulation sperm*

	Electroejaculation	Penile Vibratory Stimulation
Mean viability ± SD (% alive):		
Antegrade	9.7 ± 12.8*	25.2 ± 18.7*
Retrograde	5.4 ± 6.3	5.9 ± 9.2
Mean mucus penetration test ± SD (mm.)	13.6 ± 14.9	13.7 ± 12.6
No. immunobead test pos./total No.	0/11	0/11
Mean sperm penetration assay ± SD:		
% Egg penetrated	22.1 ± 38.0†	53.7 ± 43.0†
Penetrations/egg	1.1 ± 1.9	5.7 ± 8.8

* $p < 0.05$, paired Student's t test.
† $p < 0.06$, paired Student's t test.

D OHL 1997

ETIOLOGIE **LILLE 2012**	Patients N= 99	Orgasme N = 41
Atteinte Médullaire	**68**	**26**
Traumatisme	50	19
Vasculaire	5	2
Tumoral	4	1
Compression	5	3
Intoxication	1	0
Infection	3	1
Atteinte périphérique	**29**	**15**
Diabète Insulino Dépendant	10	7
Spina Bifida	2	0
Sclérose en plaque	7	2
Chirurgie néoplasie testiculaire	6	4
Chirurgie néoplasie colo rectal	3	1
Chirurgie néoplasie prostatique	1	1
Iatrogène	**1**	**0**
Psychogène	**1**	**0**

LILLE 2012

	Patients	Éjaculation	Antérograde	Rétrograde	Mixte	Anéjaculation
TOTAL	**N=99**	**N=72**	**N=29**	**N=34**	**N=9**	**N=27**
Atteinte Médullaire	**N=68**	**N=51**	**N=22**	**N=23**	**N=6**	**N=17**
Traumatisme	50	37	20	12	5	13
Vasculaire	5	3	0	3	0	2
Tumoral	4	4	1	3		0
Compression	5	3	0	2	1	2
Intoxication	1	1		1		0
Infection	3	3	1	2	0	0
Atteinte périphérique	**N=29**	**N=21**	**N=7**	**N=11**	**N=3**	**N=8**
DID	10	8	2	5	1	2
Spina Bifida	2	0				2
Sclérose en plaque	7	5	3	1	1	2
Chirurgie néoplasie testiculaire	6	4	1	2	1	2
Chirurgie néoplasie colorectale	3	3	1	2		0
Chirurgie néoplasie prostatique	1	1		1		0
Iatrogène	**N=1**					**N=1**
Psychogène	**N=1**					**N=1**

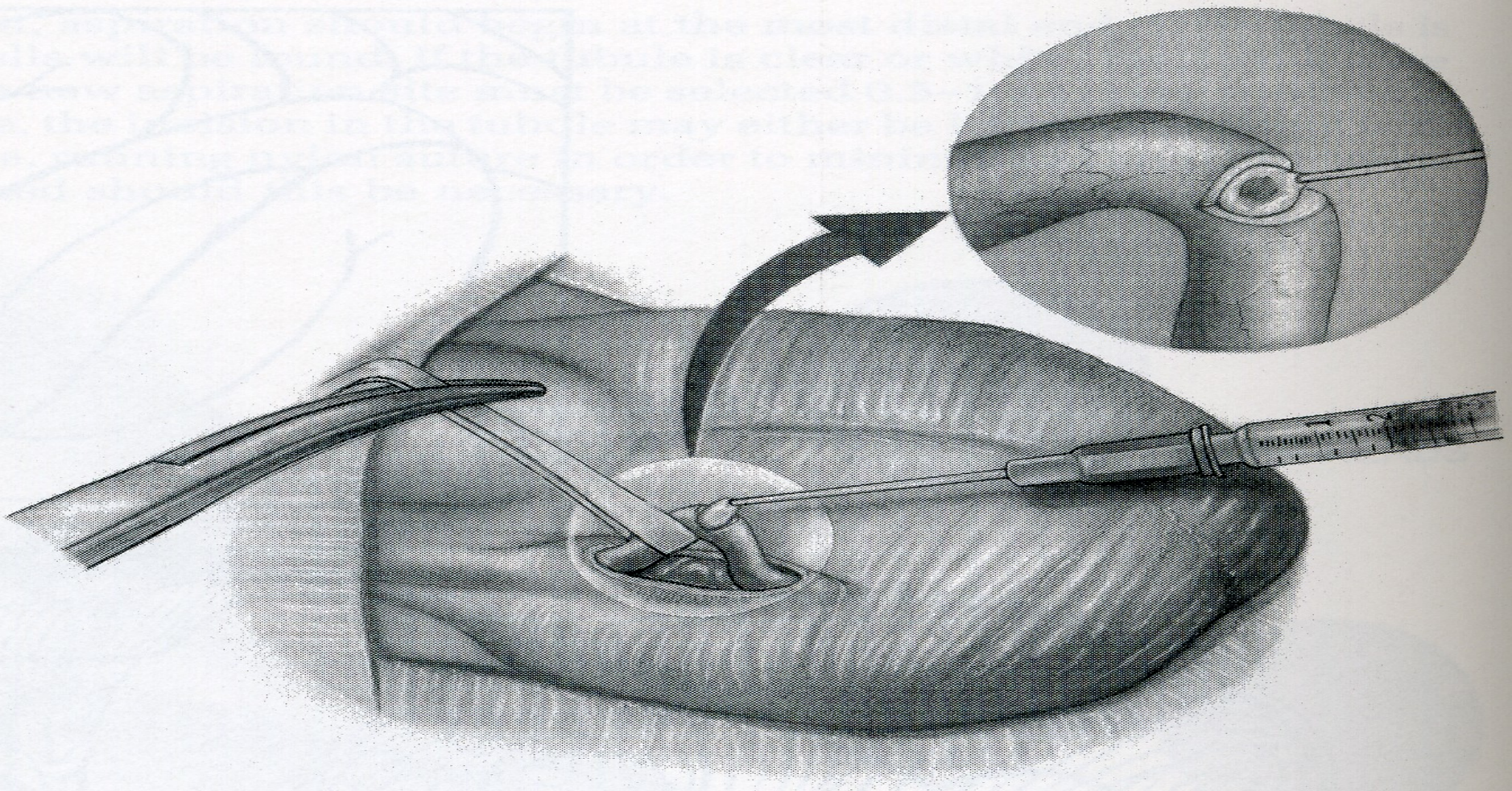
MODALITES / RESULTATS

LILLE 2012	VIBREUR SCI	GUTRON SENSIBILITE +
NOMBRE PATIENTS	37	77
NOMBRE EJACULATIONS	23	61
TAUX EJACULATION	62%	79%
NOMBRE ESSAIS	112	325
NOMBRE RECEUILS	91	240
TAUX RECEUIL	81%	74%

LE PRELEVEMENT CHIRURGICAL

- En dernier recours CAD après toutes les autres techniques
- Nécessite un agrément du site
- Impose le recours à l'ICSI pour l'utilisation du sperme auto-conservé

PRELEVEMENT DEFERENTIEL

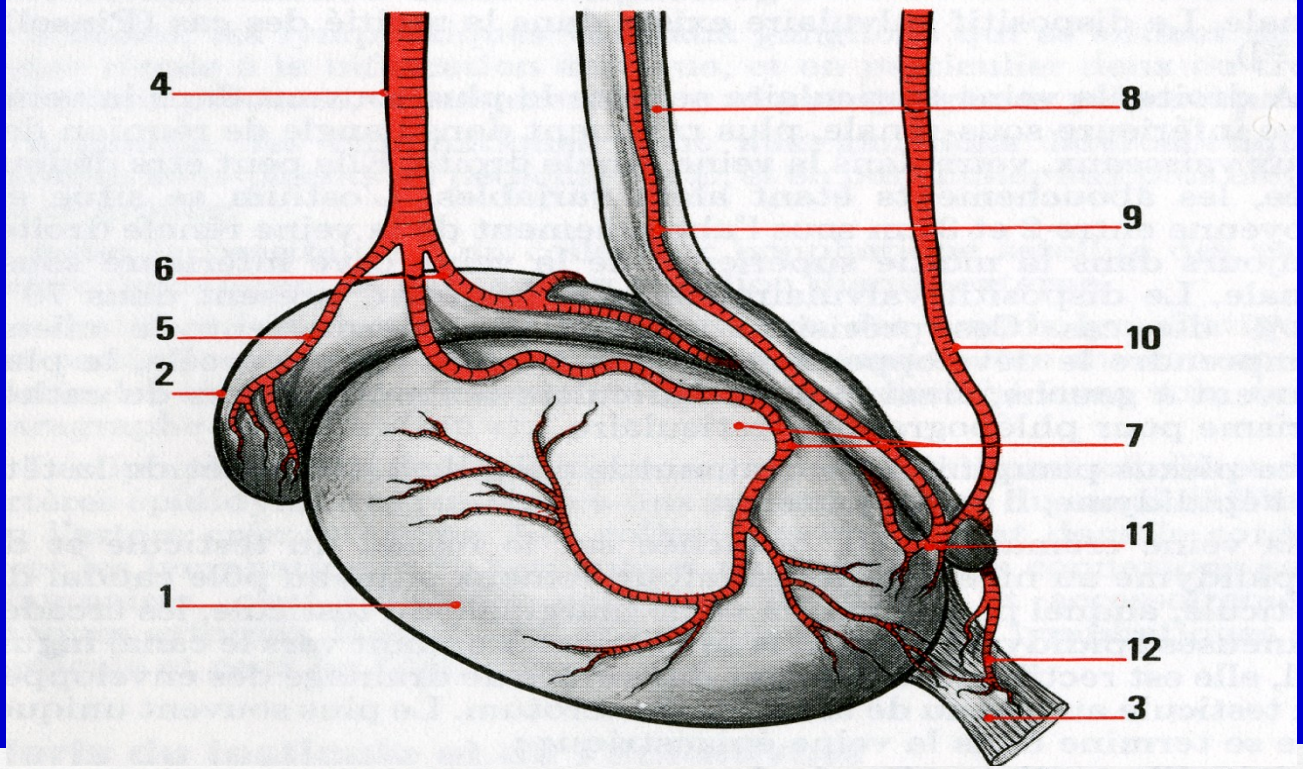


Nagler H. 1995

PRELEVEMENT TESTICULAIRE

- Echec des prélèvements déférentiels et épididymaires
- 3 techniques :
  - * aiguille TEFNA nombre ? Shifaro Y. 2002
  - * chirurgicale

TESE	microdissection	Schlegel P.N.
	uniques	Silbert T.J.
	multiples	Tournaye H.
P/TESE	Turi T. 1999, Lelannou D. 2002	



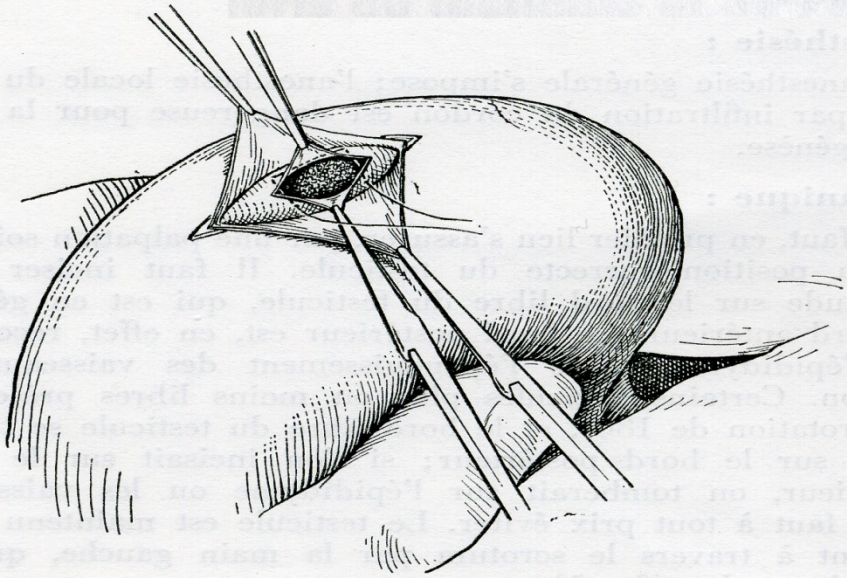


Fig. 4.

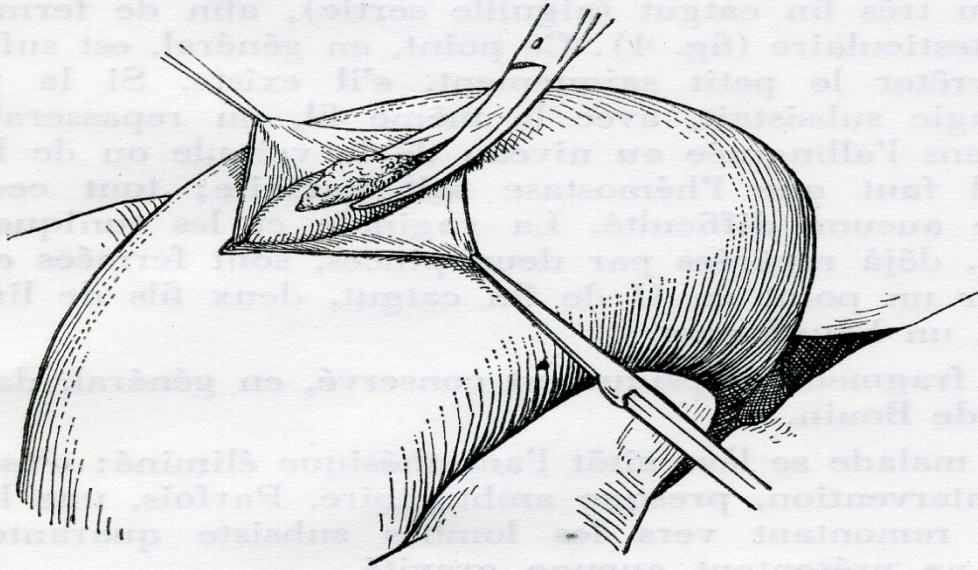


Fig. 3.

SUITES OPERATOIRES
Wood S. 2003

- Complications 20 / 52
- Douleurs (idem + / -)
- Reprise inférieure 3 j.
- PESA = TESE

Schlegel P.N. 1997

- Conséquences sur le testicule ?

  Atrophie ? Testostérone ?
- Reprise chirurgicale

  délai > 6 mois 30 / 567 (1 en 2003-1 en2004)

LE SITE DE PRELEVEMENT / ETIOLOGIES

- Anéjaculation 20 / 567 (soit 2/an)

	def.	épi.	test.
Vol test. > 15 ml	3	5	7
Vol test. ≤ 15 ml			7

Priorité à la prise en charge de l'anéjaculation hors chirurgie

RESULTATS ICSI / CHIR

Azoospermie excrétoire / Anéjaculation

	ABCD	FSH normale
	99/260	115/249
Fécondance	52 %	50 %
G./cycle	25 %	25 %
G./couple	66 %	54 %
Achmt/couple	55%	50%

Pour 2.6 cycles en moyenne par couple

TABLE 3

Comparison of semen quality and pregnancy outcomes in various groups.

	PVS	EEJ	Non-SCI
No. of men	12	16	297
Semen volume (mL)			
Mean	1.9 ± 0.5	2.1 ± 0.5	2.2 ± 0.1
Range	0.1–8.5	0.1–6.0	0.2–13.0
Median	1.4	1.0	2.0
Sperm concentration (10^6/mL)			
Mean	77.3 ± 28.1	43.4 ± 15.6	50.2 ± 4.1
Range	0.0–400.0	0.0–304.8	0.1–532.0
Median	30.0	9.5	18.0
Sperm motility (%)			
Mean	12.1 ± 3.6[a]	6.1 ± 2.1[b]	37.1 ± 1.2[a,b]
Range	0.0–48.0	0.0–36.0	0.0–85.0
Median	5.0	2.3	40.0
TMSC (10^6)			
Mean	14.8 ± 4.8	12.1 ± 4.8	33.6 ± 3.0
Range	0.0–62.0	0.0–79.0	0.0–561.0
Median	4.5	1.8	7.2
No. of IVF/ICSI cycles	21	24	443
Fertilization rate per cycle (%)	61.9	55.8[b]	71.4[b]
Pregnancy rate per cycle (%)	42.9	37.5	42.2
Pregnancy rate per couple (%)	58.3	50.0	57.9
Live birth rate per cycle (%)	42.9	33.3	37.6
Live birth rate per couple (%)	58.3	43.8	53.5

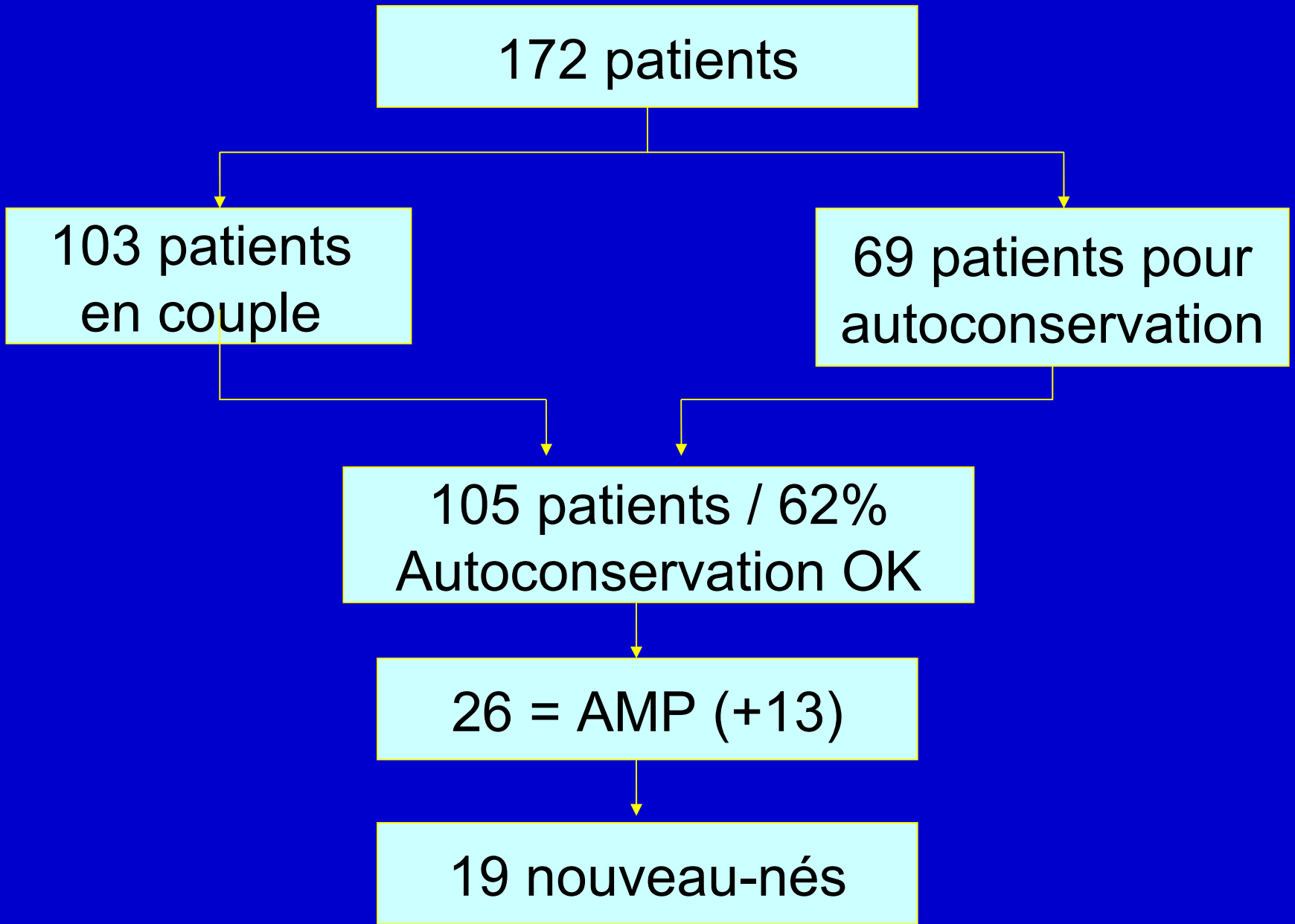
Note: All means are given with SEM. Mean semen volume, mean sperm concentration, and mean sperm motility are shown in antegrade fractions. Mean total motile sperm count (TMSC) is shown in the combined antegrade and retrograde fractions. Mann-Whitney *U* test was performed to compare means. Chi-square test was performed to compare rates. $P \leq .05$ was considered to be statistically significant. EEJ = electroejaculation; IVF/ICSI = in vitro fertilization with intracytoplasmic sperm injection; PVS = penile vibratory stimulation; SCI = spinal cord injury.

[a] Significant difference between the PVS group and the non-SCI group.

[b] Significant difference between EEJ group and non-SCI group.

Kathiresan. ICSI outcomes using sperm from SCI men. Fertil Steril 2011.

Notre expérience entre 2001 /07 /2012



26 COUPLES
DEMARCHE DE PARENTALITE

	Spontanée	Vibreur	Gutron	Gutron + Vibreur	TOTAL Sans chirurgie	Chirurgie	TOTAL avec chirurgie
Fécondation AMP		**5**	**7**	**3**	**15**	**2**	**17**
GIU unique	2	4	5	1	**12**	2	**14**
GG			1	1	**2**		**2**
GEU			1	1	**2**		**2**
FC		1			**1**		**1**
Total Fécondation		**5**	**7**	**3**	**17**	**2**	**19**

Tableau 12 : Nombre de fécondation par cycle et de grossesses ayant abouti en fonction du type de prise en charge

CONCLUSION

- Prise en charge multidisciplinaire
- La plus précoce possible en respectant le patient
- Du plus simple au plus compliqué