

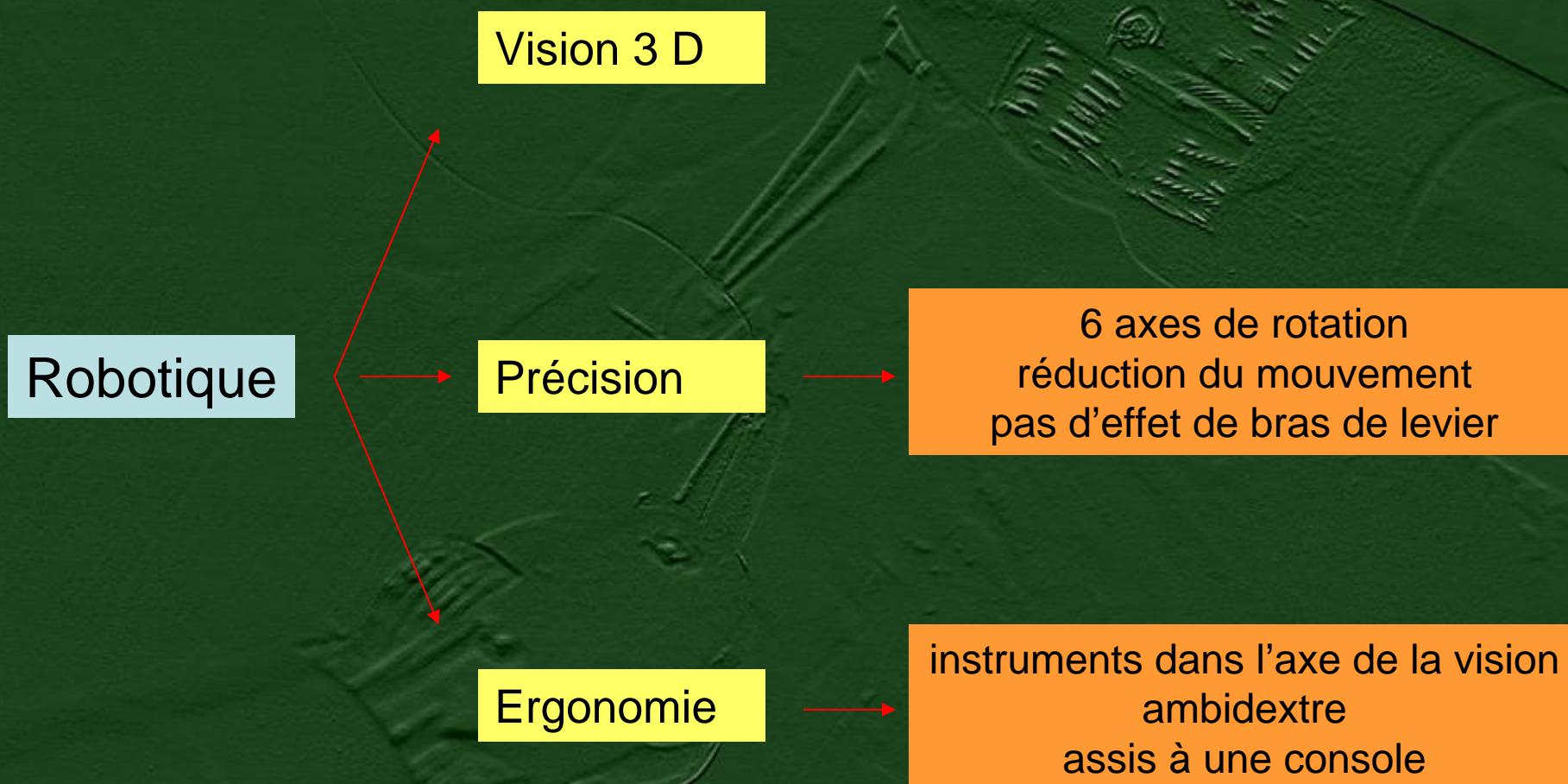


Le robot da Vinci® : miroir aux alouettes ou pierre philosophale

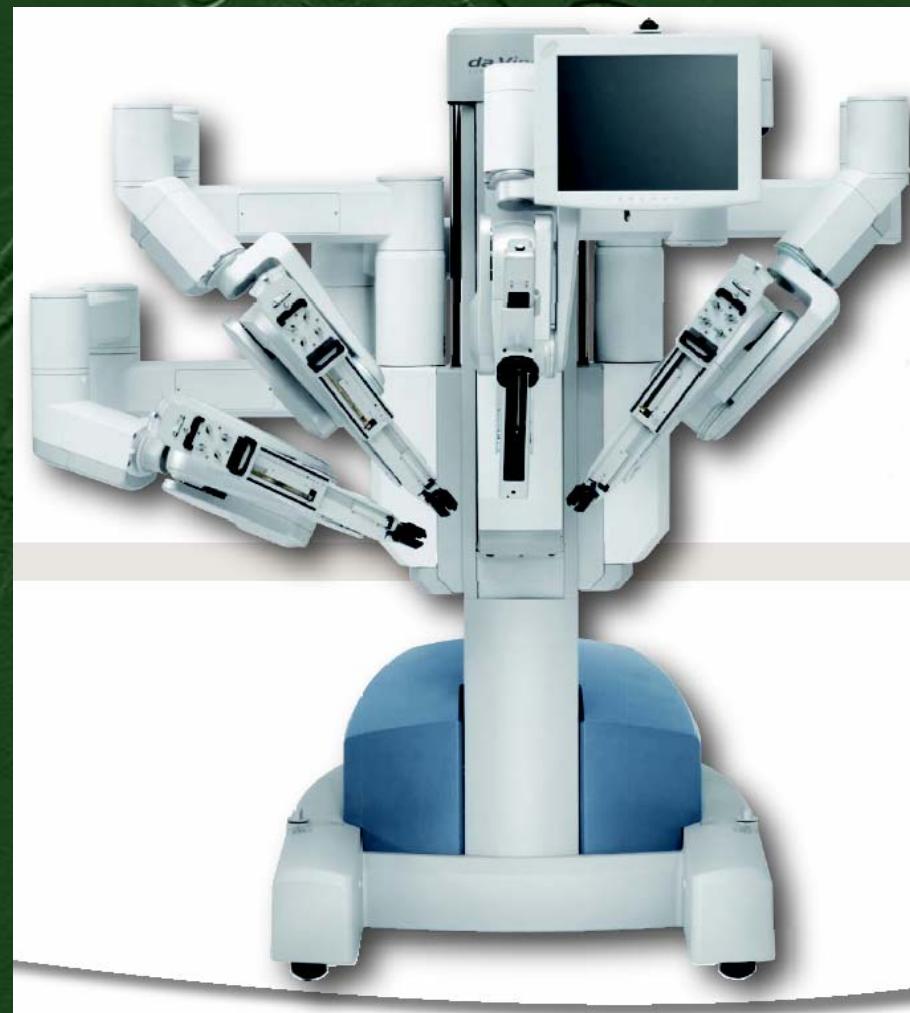
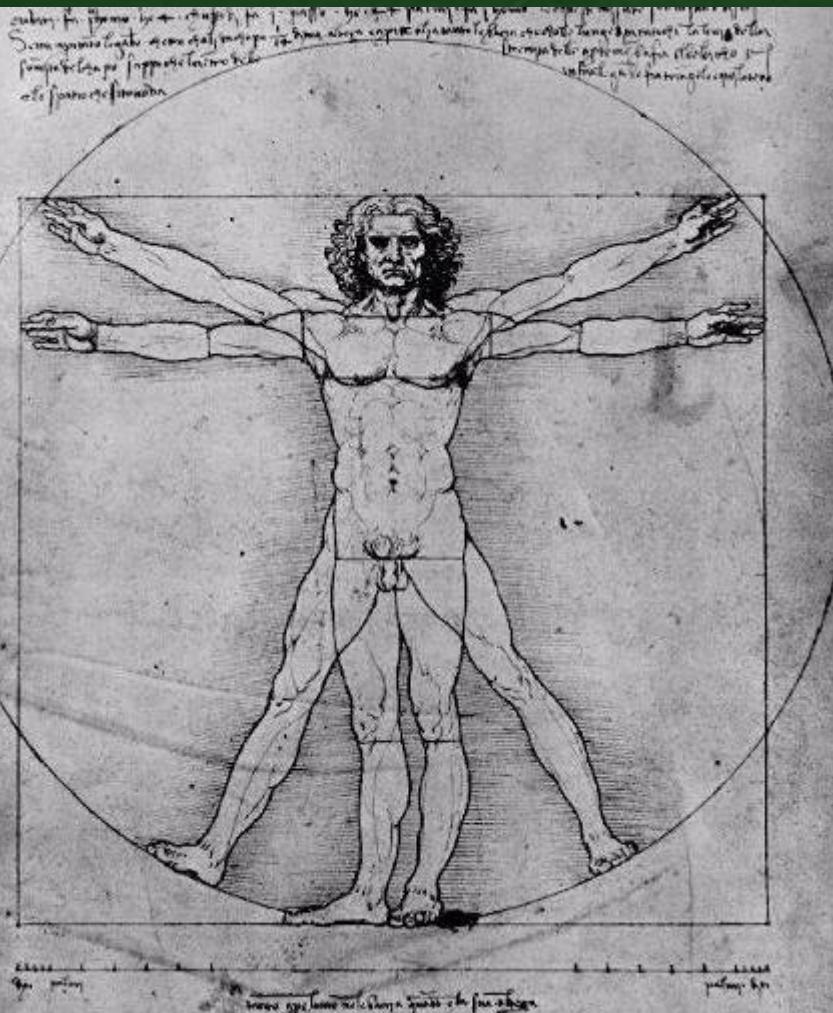
Ch.-H. Rochat

SSU, Genève
8 Septembre 2006

Le robot Da Vinci ®



Le robot Da Vinci ®



Vision 3D

2 caméras

2 sources de lumière froide

vision dans l'axe des bras



Précision

2:1 à 5:1



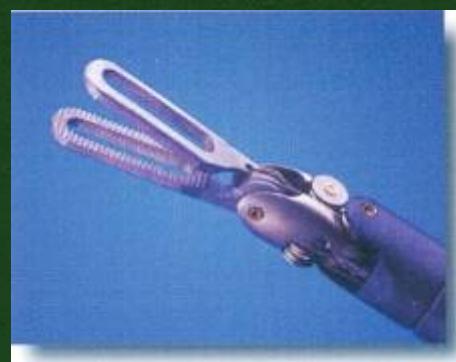
5 cm

réduction des
mouvements



1 cm

suppression du
tremblement



Ergonomie



Le robot da Vinci® :

- Chirurgie mini invasive
- Prolongement de la laparoscopie
- Chirurgie des petits espaces
- Chirurgie des espaces profonds (pelvis)

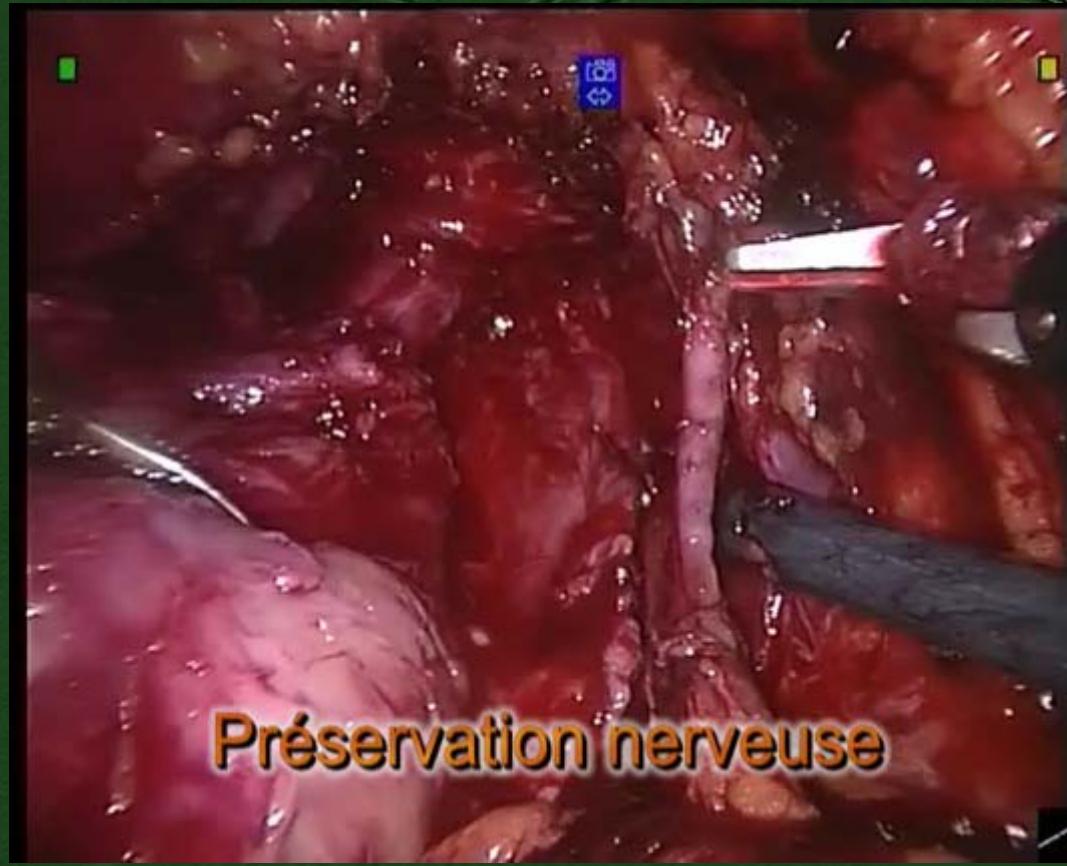
Avantages sur la chirurgie laparoscopique

- Vision 3D
- Axes de dissection à 90° d'angulation sur 360° de rotation



Avantages sur la chirurgie laparoscopique

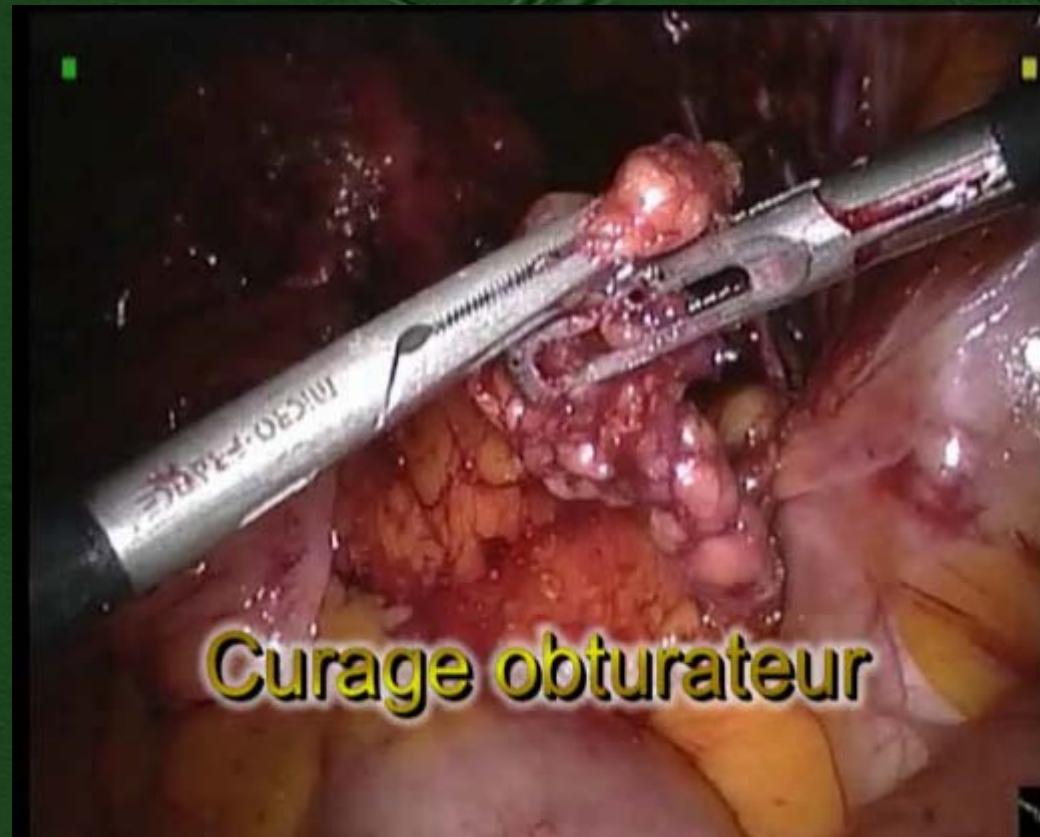
- Vision 3D
- Axes de dissection à 90° d'angulation sur 360° de rotation



Durée 0:34

Avantages sur la chirurgie laparoscopique

- Vision 3D
- Axes de dissection à 90° d'angulation sur 360° de rotation



Durée 0:16

Avantages sur la chirurgie laparoscopique

- Vision 3D
- Suture aisée



Durée 0:44

Avantages sur la chirurgie laparoscopique

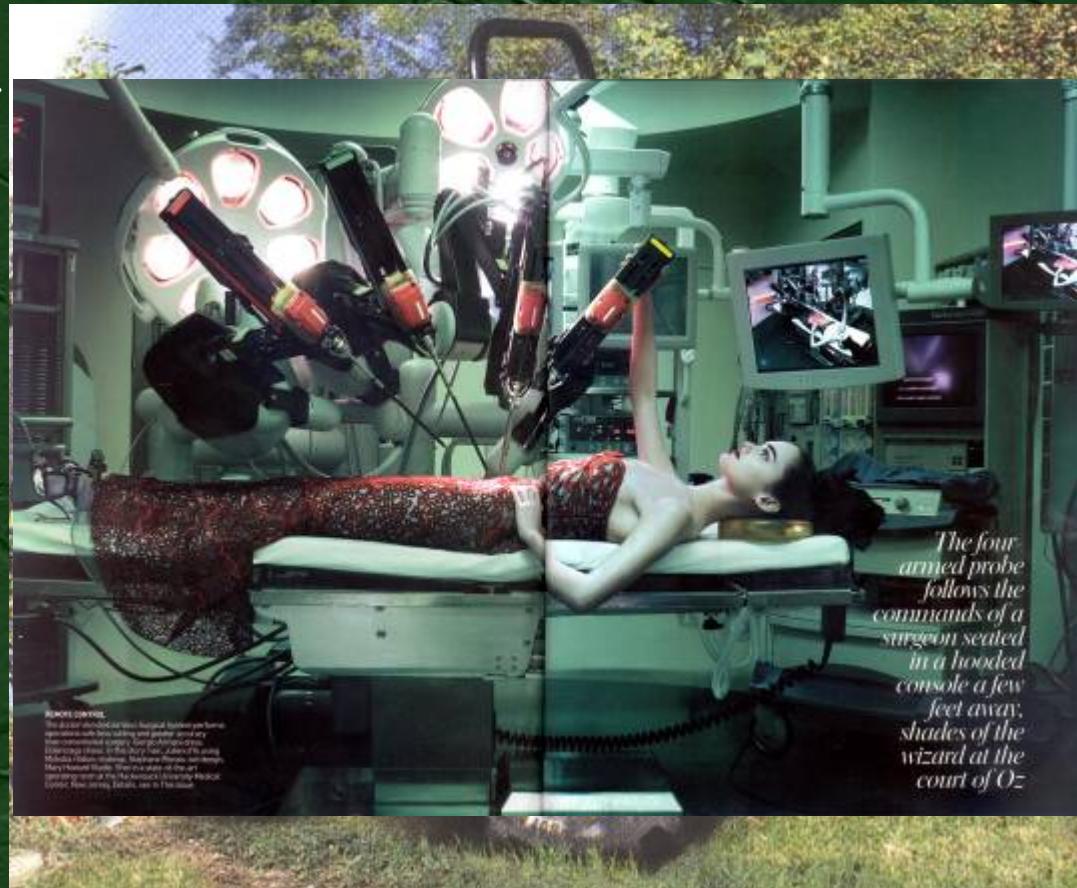
- Vision 3D
- Suture aisée
 - Pyéloplastie,
 - Pyélotomie
 - Entéro-cystoplastie
 - Promonto-fixation
par bandelettes



Durée 0:43

Le robot da Vinci® : Remarques

- Le micromanipulateur Da Vinci est un « instrument » comme un autre, c'est la tête et les mains de l'opérateur qui l'asservissent, donc à ne pas mettre dans toutes les mains.
- Le coût du système est un frein indéniable à la démocratisation et peut susciter de la convoitise.





Le miroir aux alouettes:
Le robot Da Vinci est un pur produit de
marketing.

La pierre philosophale:
S'imposer comme gold standard

Laparoscopie et urologie

- Néphrectomie

- Pyéloplastie



Gold standard

- NB: Apport restreint de la robotique

Laparoscopie et urologie

➤ Prostatectomie radicale

- Laparoscopic Radical Prostatectomy : A Critical Analysis of Surgical Quality.
 - Touijer et Guillonneau, Eur Urol 2006; (49) 625-632
- Laparoscopic Radical Prostatectomy for Localized Prostate Cancer: A Systematic Review of Comparative Studies
 - Tooher and all, J Urol Vol 175, 2011-2017, June 2006

La littérature actuelle ne permet pas d'affirmer que la laparoscopie rejoint les standards de qualité

Prostatectomie radicale laparoscopique vs chirurgie ouverte

- Beaucoup de protocoles différents
- Beaucoup d'opérateurs
- Aucune étude prospective randomisée
- Curage ganglionnaire souvent oublié, traitement des pièces opératoires non standardisées
- Evaluation fonctionnelle non standardisée
- Evaluation à long terme négative pour les techniques émergentes.

Laparoscopie vs chirurgie ouverte VS robotique



Urol Clin N Am 31 (2004) 701–717

**UROLOGIC
CLINICS
of North America**

Vattikuti Institute prostatectomy, a technique of robotic radical prostatectomy for management of localized carcinoma of the prostate: experience of over 1100 cases

Mani Menon, MD, FACS^{a,b}, Ashutosh Tewari, MD^a,
James O. Peabody, MD^a, Alok Srivastava, MD^a,
Sanjeev Kaul, MD^a, Akshay Bhandari, MD^a,
Ashok K. Hemal, MD, MCh, FACS^{a,*}

^aVattikuti Urology Institute, Henry Ford Hospital, 2799 West Grand Boulevard, K-9, Detroit, MI 48202-2689, USA

^bDepartment of Urology, Case Western Reserve University, 11000 Euclid Avenue, Cleveland, OH 44106-4931, USA

Robotic Radical Prostatectomy (VIP)

Table 4

Operative parameters for conventional, laparoscopic, and robotic radical prostatectomy (VIP)

| Technique | Operating time (min) | Estimated blood loss (mL) | Duration of catheterization(d) | Complication rates (%) | Positive margins (%) |
|---------------|-------------------------|------------------------------|-----------------------------------|---------------------------|-------------------------|
| RRP | | | | | |
| Lepor | 131 | 820 | 7–10 | 6.6 | 17 |
| Catalona | 217 | 1395 | 7–14 | 10 | 21 |
| LRP | | | | | |
| Montsouris | 217 | 345 | 6.6 | 13.3 | 15 |
| Rassweiler | 278 | 1230 | 8 | 31 | 17 |
| Abbo | 271 | NA | 9 | 11.66 | 18.1 |
| Turk | 214 | 177 | 10 | 14 | 16–39 |
| VIP | | | | | |
| Menon, Tewari | 160 | 153 | 7 | 5 | 6 |

Abbreviations: NA, not available, LRP, laparoscopic radical prostatectomy; RRP, radical retropubic prostatectomy.

Data from Refs. [6,7,14–16,24,27,38–47].

Critères de qualité atteints
Économicité
Reproductibilité?

ERUS 2005

EUROPEAN ROBOTIC UROLOGY SYMPOSIUM

Geneva, Switzerland > February 24-25, 2005



Launching the European Data Base

Clinique
GENERALE BEAULIEU

S·M·B



INTUITIVE
SURGICAL®

EGRU

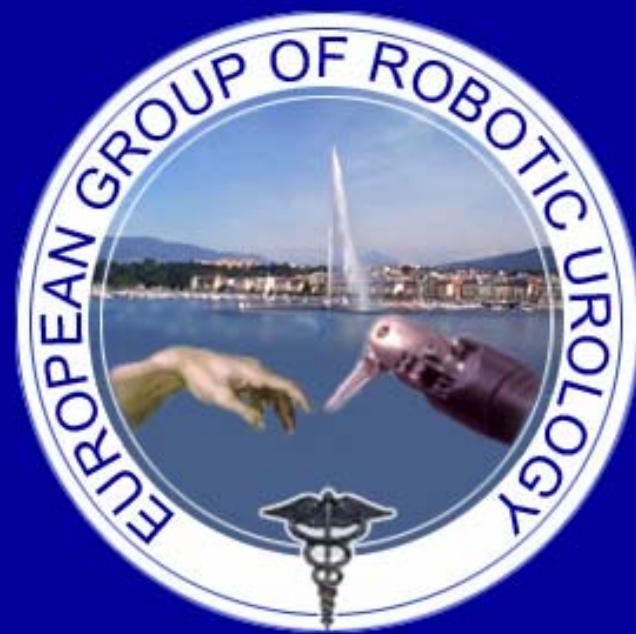
- Created November 18, 2005 in Paris, located in Geneva
- Members of the Committee and of the constituting Assembly:

| | | | |
|----------------------|-----------|-------------|---|
| Thierry PIECHAUD | Bordeaux | France | President |
| Peter WIKLUND | Stockholm | Sweden | Vice-President |
| Xavier CATHELINEAU | Paris | France | Scientific Secretary |
| Walter ARTIBANI | Padua | Italy | Treasurer |
| Charles-Henry ROCHAT | Geneva | Switzerland | Secretary General |
| Aldo CAMPANA | Geneva | Switzerland | Scientific Advisor (President GFMER) |

Objectives of EGRU (Statutes)

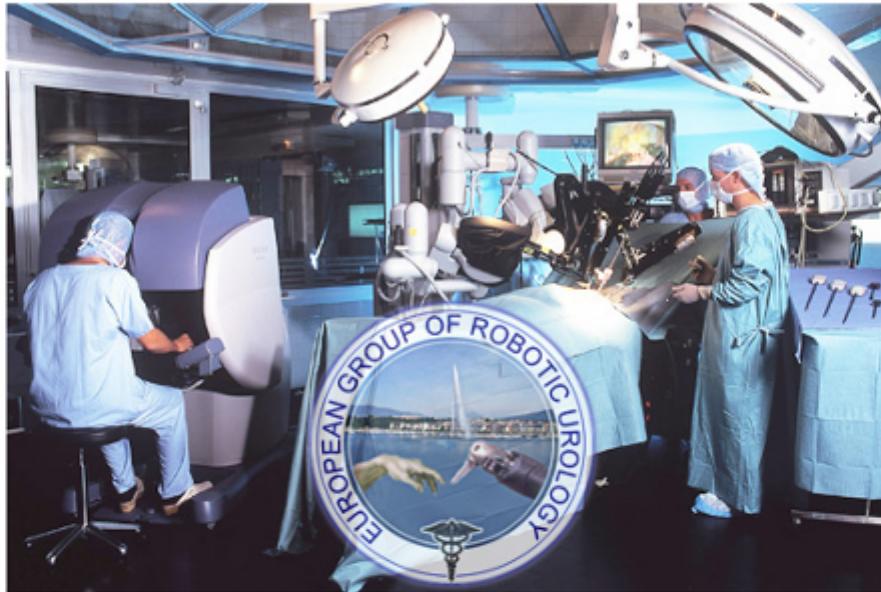
- to promote the meeting of the persons involved in professional activity related to research and/or clinic in robotic urology surgery
- to support research activities
- to offer and promote theoretical and practical training
- to manage a clinical database for scientific analyses and prospective studies
- to organize and participate in congresses, workshops, symposiums and conferences at national and international levels
- to contribute to publication and information through different medias (scientific journals, Internet) and to manage its website
- to establish contacts and collaboration by participating in any initiative useful to its objectives at national and international levels
- to undertake any other measure aiming at pursuing and achieving its goals

European Group of Robotic Urology



Groupe Européen de Robotique en Urologie

European Group of Robotic Urology



The European Group of Robotic Urology (EGRU) was created during the European Congress of Robotic Surgery held in February 2005 in Geneva. The official constitutions were drawn up on 18 November 2005. EGRU is hosted by the Geneva Foundation for Medical Education and Research.

Objectives

The objectives of EGRU are:

- to promote education, research and development in urologic robotic surgery
- to build a network of European urologic centres equipped with an operational robot system (DA VINCI). Urologists of these centres collaborate with one another by sharing their technical experiences and by participating in multicentre clinical studies
- to provide practical training in urologic robotic surgery

Members of the Committee

- Thierry Piéchaud, Bordeaux (France) - President
- Peter Wiklund, Stockholm (Sweden) - Vice-President
- Charles-Henry Rochat, Geneva (Switzerland) - Secretary General
- Xavier Cathelineau, Paris (France) - Scientific Secretary
- Walter Artibani, Padua (Italy) - Treasurer
- Aldo Campana, Geneva (Switzerland) - Scientific Advisor

European Group of Robotic Urology

Internet based clinical trial of robotically assisted laparoscopic prostatectomy

Clinical trial objectives

The goals of the clinical study are the following :

- clinical study on the practice of robotically assisted laparoscopic prostatectomy for the treatment of localized prostate cancer.

| Security Access Login | |
|---------------------------------------|--------------------------------------|
| User ID | <input type="text" value="rrr"/> |
| Password | <input type="password" value="***"/> |
| <input type="button" value="Submit"/> | |

Description of the Internet Database

The Geneva Foundation for Medical Education and Research (GFMER) has developed a web application composed of web oriented interface that is informatically connected to a database. The goal of the web forms and the database is to allow the collection and evaluation of data as it pertains to the study of clinical practices of robotically assisted laparoscopic prostatectomy for the treatment of localized prostate cancer.

The system allows a multi centric administration and management of data, and allows multiple users. An easy access to the collected data has been made possible using the search capabilities of this tool. Statistical analysis is presented both in text form and graphical charts; The statistics are updated in real-time so that they accurately reflect the latest data that has been collected.

The database itself is secured in terms of user access, authentication level, auditing / logging of processes and actions, and preservation of anonymity where required. Authorized users are able to see data that has been entered into the system and to export that data in a form that is readable by Microsoft Excel or other statistical analysis software. The core database application is coordinated by GFMER in collaboration with recognized international experts.

Meeting calendar 2006

| Meeting | Date | Location |
|--|-----------------------|----------------------|
| Pacific Rim Robotics Symposium | January 6-7, 2006 | Anaheim, CA |
| Southeastern Section of the AUA Meeting | March 2-5, 2006 | Puerto Rico |
| European Association of Urology (EAU) Meeting | April 5-8, 2006 | Paris, France |
| World Robotic Urology Symposium | May 13-15, 2006 | Columbus, OH |
| American Urological Association (AUA) Annual Meeting | May 20-25, 2006 | Atlanta, GA |
| Cornell ART (Adv. Robotic Techniques) | June, 2006 | NY, NY |
| 24th World Congress of Endourology | August 17-20, 2006 | Cleveland, OH |
| World Congress of Endoscopic Surgery (EAES) | September 13-16, 2006 | Berlin, Germany |
| ERUS (European Robotic Urology Symposium) | September, 2006 | Stockholm, Sweden |
| South Central Section AUA Annual Meeting | October 4-8, 2006 | Santa Fe, New Mexico |
| IRUS (International Robotic Urology Association) | October, 2006 | Dearborn, MI |
| Western Section AUA Annual Meeting | October 22-27, 2006 | Maui, Hawaii |

Google Search

 Web www.gfmer.ch


Print this page

Geneva Foundation for Medical Education and Research (GFMER)

Internet Data Base

- web oriented interface connected to a data base
- study of clinical practices of DVP
- Multicenter / multiple users
- real time statistics
- access and anonymity secured (users/patients)

European Multicenter dVP Study (EMdS)

Currently no European collaborative multicenter prospective studies investigating 3 main outcomes of DVP exist:

- cancer control
- urinary continence
- sexual function

European Multicenter dVP Study (EMdS)

➤ Participating centers

| | | |
|-------------------------------------|----------------------|----------------|
| Clinique St Augustin | Bordeaux | T. Piechaud |
| Clinique Générale Beaulieu | Geneva | C.-H. Rochat |
| Karolinska Universitetsjukhuset | Stockholm | P. Wiklund |
| Policlinico Universitario di Padova | Padova | W. Artibani |
| Azienda Ospedaliera Luigi Sacco | Milano | F. Gaboardi |
| Institut Mutualiste Montsouris | Paris | X. Cathelineau |
| La Pitié-Salpêtrière | Paris | C. Vaessen |
| Onze Lieve Vrouw Ziekenhuis | Aalst | A. Mottrie |
| Chu de Nancy Brabois | Vandoeuvre les Nancy | L. Cormier |
| Det Norske Radium Hospital | Oslo | B. Brennhoved |
| Hirslanden Klinik | Zürich | H. John |

European Multicenter dVP Study (EMdS)

Urinary continence

- Validated self- administered questionnaires (multilingual)
- ICIQ score

Questionnaire H1

European Multicenter dVP Study (EMdS)

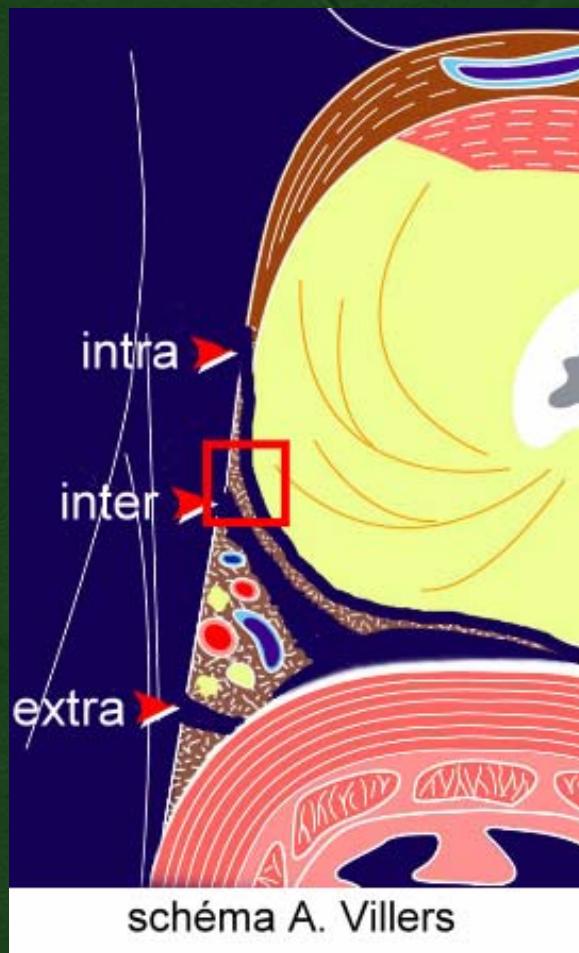
Sexual function

- Pre and post operative validated self questionnaires (multi language)
- IIEF 5 score

Questionnaire H2

European Multicenter dVP Study (EMdS)

Detailed surgical dissection

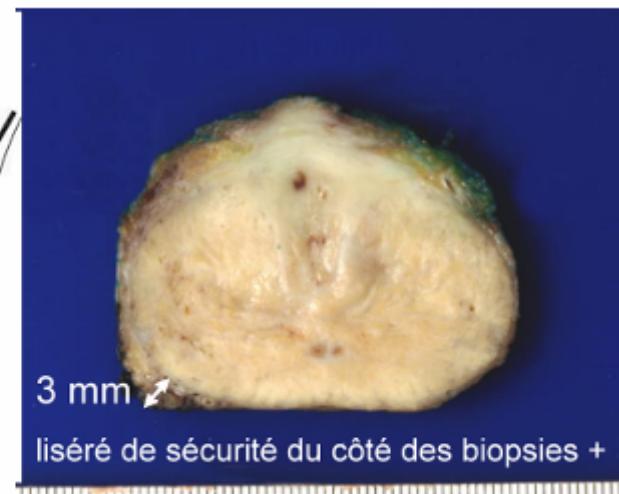
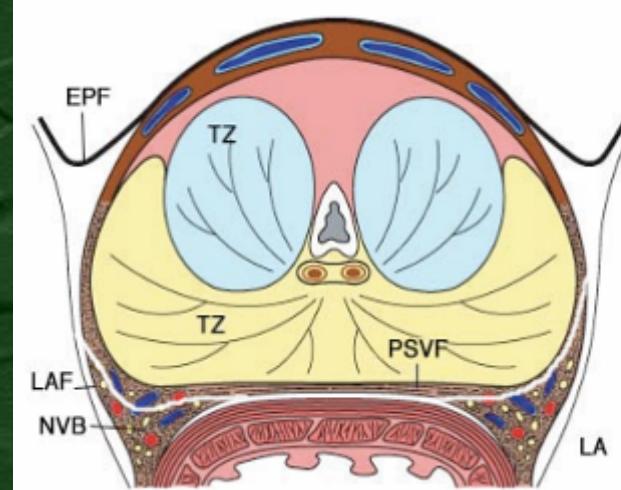
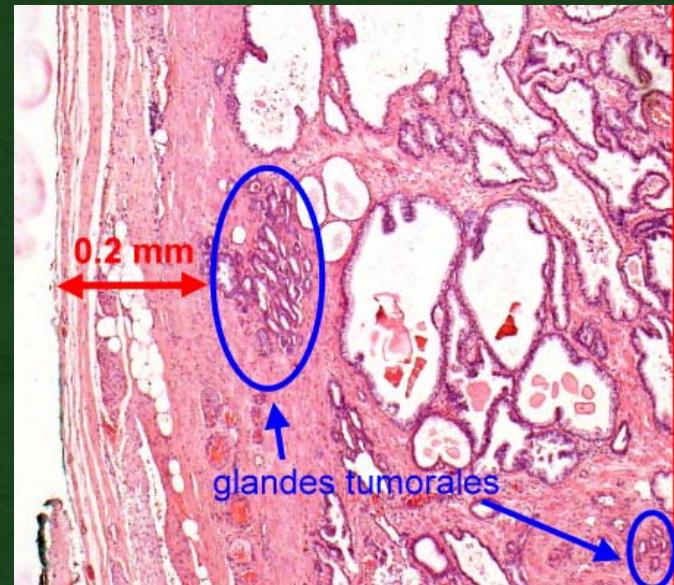


INTRA-operative

European Multicenter dVP Study (EMdS)

Detailed margins status/pathologic stage

Pathological results

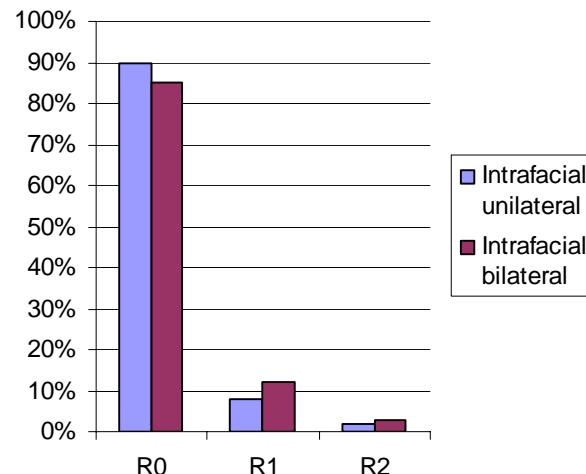


European Multicenter dVP Study (EMdS)

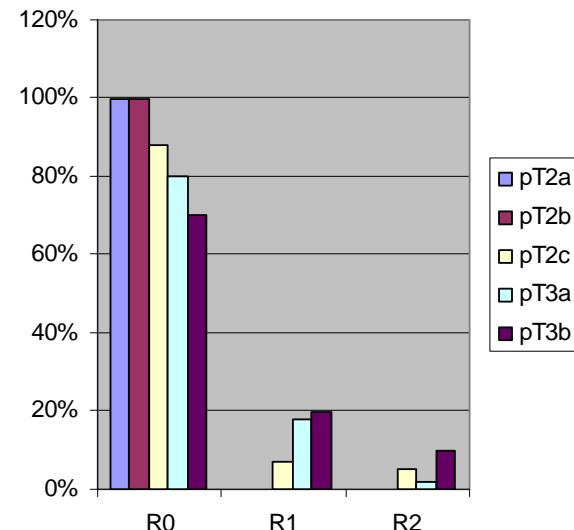
margins status/pathologic stage

- Location
- Quantification of Margin Status
- Relation to Stage

Percentage distribution of margin type per intraoperative nerve sparing type for preoperative stage T1c



Percentage distribution of margin type per pathological results stage



European Multicenter dVP Study (EMdS)

- Coordinators T. Piéchaud and C.-H. Rochat
- Inclusion period : one year
- Data management : GFMER
- Each participant is free to analyse and utilise his own data
- Publications through scientific committee of EGRU
- Independent from Intuitive Surgical

- Future discussions: Pathology assessment by an Independent Core Laboratory

Conclusion

➤ Chirurgie mini invasive

- Moins de saignement
- Hospitalisation écourtée



logique
demandée
économique



établi

➤ Le cas de la dVP :

- Risque oncologique n'est plus à débattre
- Curage ganglionnaire facilité
- Continence « no pad » semble plus rapide
- Avantage sur l'érection est à démontrer
- Coût de la technologie
- European Multicenter dVP Study (EMdS)

Conclusion

➤ Situation en Suisse

- 5 Robots da Vinci ®
- 3 nouveaux cette dernière année

➤ Dans le monde

- 320 Robots da Vinci ®
- 40 000 dVP

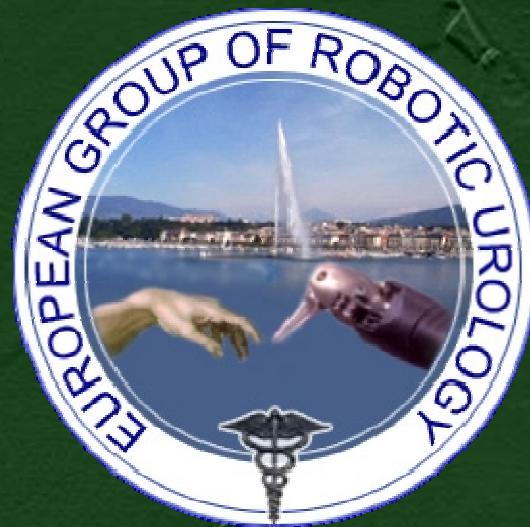
Conclusion

Meilleure vision
Meilleure précision
Meilleurs résultats ?

European Multicenter dVP Study (EMdS)



European Group of Robotic Urology



Status Report on the
European Data Base