LAPAROSCOPY FOR NON PALPABLE TESTIS: IS INGUINAL EXPLORATION ALWAYS NECESSARY WHEN THE CORD STRUCTURES ENTER THE INGUNAL RING?

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Laparoscopy for Nonpalpable Testis: Is Inguinal Exploration Always Necessary When the Cord Structures Enter the Inguinal Ring?

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G. SAGGIOMO, M.D., P. PARMEGGIANI, M.D., and G.P. FIORETTI, M.D.
LAPAROSCOPY FOR NON PALPABLE TESTIS: DISCUSSED PROBLEMS

- CLIPPING SPERMATIC VESSELS
- EXPLORE THE INGUINAL CHANNEL WHEN THE CORD STRUCTURES ENTER THE INGUINAL RING
NON PALPABLE TESTIS: TRADITIONAL APPROACH

INGUINAL EXPLORATION

• EMPTY: ABDOMINAL EXPLORATION

• VAS AND VESSELS: STOP
LAPAROSCOPIC CLINICAL ASPECT

- INTRABDOMINAL TESTIS
- BLIND ENDING CORD STRUCTURES ABOVE THE INTERNAL INGUINAL RING
- CORD STRUCTURES ENTERING OPEN/CLOSED INTERNAL RING
- CORD ABSENCE
VAS AND VESSELS INTO THE RING
ANATOMICAL ASPECT

• SPERMATIC VESSELS : LATERAL, RETRO-PERITONEAL POSITION
• VAS DEFERENS : CAUDAL DIRECTION, MEDIAL POSITION
LAPAROSCOPIC OBSERVATION
SPERMATIC VESSELS-INTERNAL RING

• COMPARISON NORMAL WITH ABNORMAL SIDE
• DIRECTION
• SIZE - WIDTH (HYPOPLASTIC)
• OPEN - CLOSED INTERNAL RING
VANISHING TESTIS hypotheses

• LATE GESTATIONAL EVENT
• ENDOCRINOPATHY : NORMAL CELL ANATOMY IN THE CONTRALATERAL TESTIS
• MECHANICAL TORSION : HEMOSIDERIN - CALCIFICATION
LAPAROSCOPIC OBSERVATION OF THE INGUINAL RING

OPEN
• 91% TESTIS PRESENT

CLOSED
• 97% ABSENT / ATROPHIC TESTIS

ELDER J. UROL 1994
CRITICAL ANALYSIS OF THE RESULTS

TESTIS / CORD BEYOND INTERNAL RING
• 53/106 (50%) : NO BENEFIT

TESTIS / CORD ABOVE INTERNAL RING
53/106 (50%) : BENEFIT

CALDAMONE J. UROL 1992
INGUINAL EXPLORATION: opinions

• NO
  Malone, Br.J Urol, 1988
  Weiss - Seashore J. Urol 1987
  Castillo J. Urol. 1990

• YES
  Tennebaun-Kaplan J.Urol 1993
  Bloom J.Urol 1996
  Plootzker J.Urol 1992
  Duckett J.Urol 1994
ANY VIABLE TISSUE IS THEORETICALLY OR POTENTIALLY AT RISK FOR MALIGNANT DEGENERATION
## INGUINAL EXPLORATION:

### % OF TESTICULAR VAILABLE CELLS

<table>
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<tr>
<th>Author</th>
<th>Nubbins</th>
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<tr>
<td>Plotzker</td>
<td>23</td>
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<td>Duckett</td>
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<td>5 (10%)</td>
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<tr>
<td>Mackinno</td>
<td>18</td>
<td>-</td>
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<tr>
<td>Present</td>
<td>21</td>
<td>2 (10%)</td>
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RISK OF TESTICULAR CANCER IN UNDESCENDED TESTIS

• 4 FOLD INCREASED RISK
• 5/843 BOYS OPERATED FOR UNDESCENDED TESTIS WITH TESTICULAR NEOPLASIA
• 3 PT ABNORMAL CHROMOSOMES AND 2 PT ABNORMAL EXTERNAL GENITALIA
• 1 CASE RECORDED OF INTRATUBULAR GERM CELL NEOPLASIA IN TESTICULAR REMNANT
INTRATUBULAR GERM CELL NEOPLASIA

• 1 CASE RECORDED IN TESTICULAR REMNANT
40 LAPAROSCOPIES
41 IMPALPABLE TESTES

• 15% BLIND ENDING CORD STRUCTURES
• 32.5% INTRABDOMINAL TESTIS
• 52.5% CORD STRUCTURES ENTERING THE INGUINAL RING
LAPAROSCOPIC FINDINGS:
41 NPT

- ABDOMINAL TESTIS 13 pt
- BLIND ENDING 7 pt
- VAS - VESSELS INTO RING 21 pt
VAS AND VESSELS INTO THE RING
21 NPT

• INGUINAL EXPLORATION
• HYPOPLASIC VESSELS  85 %
HISTHOLOGICAL FINDINGS

- SCARS AND/OR CALCIFICATIONS 70% - 50%
- TESTICULAR VIABLE CELLS 10%
- IMMATURE SEMINIFEROUS TUBULES NO VIABLE CELLS 15%
- NO MALIGNANCY RECORDED
AS THE TESTICULAR REMNANT IS LOCATED DISTALLY AS WELL THE ASPECT OF SPERMATIC VESSELS IS NORMAL
LAPAROSCOPIC OBSERVATION OF SPERMATIC VESSELS AND VAS ENTERING A CLOSED INTERNAL INGUINAL RING IS USUALLY ASSOCIATED WITH AN ATROPHIC TESTICULAR OR EPIDIDIMAL REMNANT
CORD STRUCTURES ENTERING THE INGUINAL RING

- HYPOPLASIC VESSELS CLOSED INGUINAL RING: NO EXPLORE
- HYPO AND NORMAL DEVELOPED VESSELS - OPEN INGUINAL RING: EXPLORE
- NORMAL DEVELOPED VESSELS - CLOSED INGUINAL RING: EXPLORE
CONCLUSIONS

• INGUINAL EXPLORATION COULD BE AVOIDED WHEN HYPOPLASIC VESSELS ARE FOUND ENTERING A CLOSED INGUINAL RING

• THE ANATOMICAL ASPECT OF THE SPERMATIC VESSELS DENOTE THE PRESENCE OR THE ABSENCE OF TESTICULAR TISSUE
CONCLUSIONS

• INGUINAL EXPLORATION IS INDICATED WHEN AN OPEN RING AND / OR NORMAL VESSEL ARE OBSERVED LAPAROSCOPICALLY.

• THE VALUE OF LAPAROSCOPY COULD INCREASE TO 80/90 % AND EXERT A SURE BENEFIT FOR THE PATIENT.

• INGUINAL EXPLORATION COULD BE DELAYED WHEN A TESTICULAR PROSTHESIS WILL BE IMPLANTED.