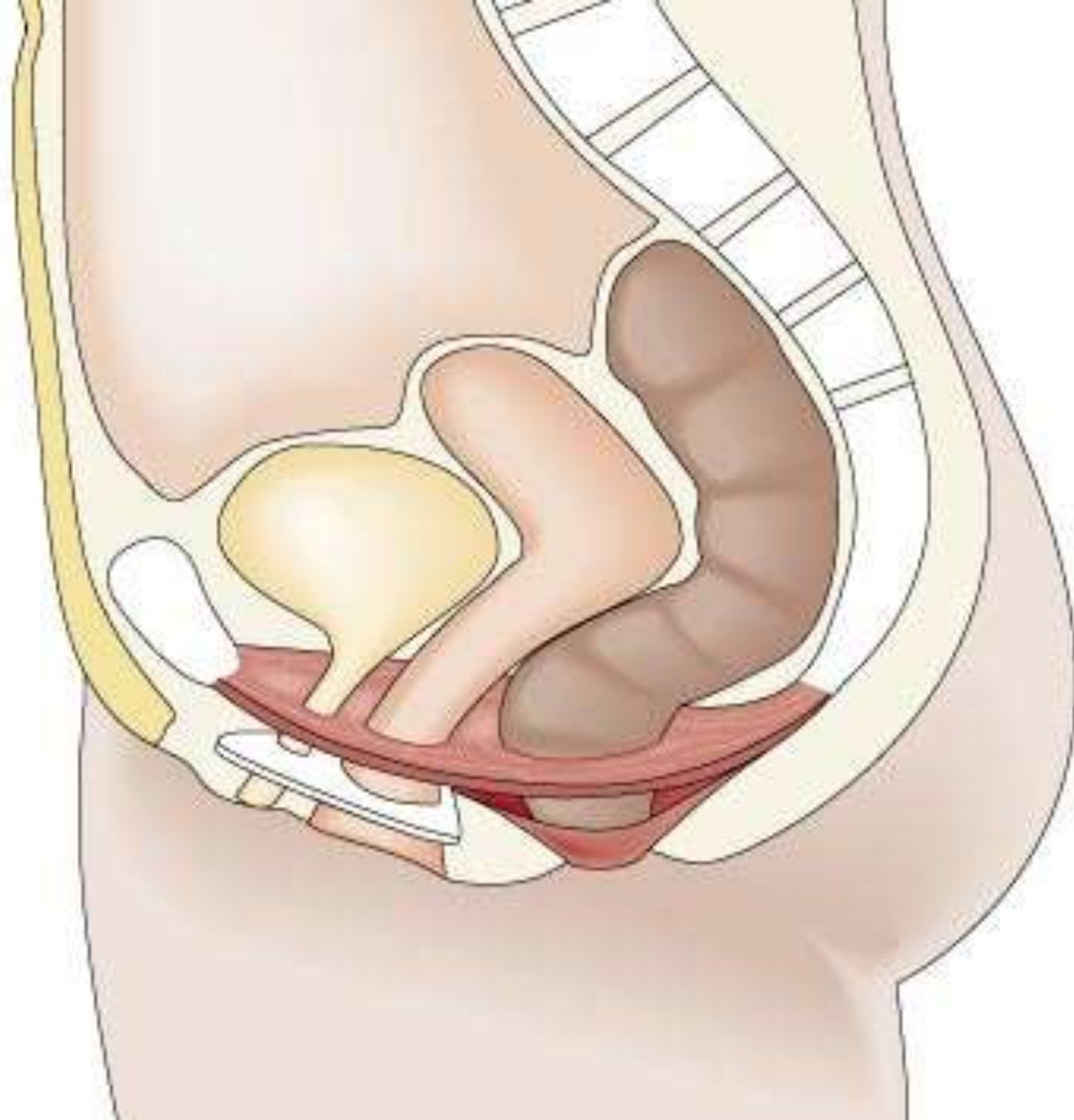


PELVIC ORGAN PROLAPSE TYPES AND STAGES

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Assistant Professor Hashmite University







Pelvic Organ Prolapse Etiology

- **Parity is the strongest risk factor**
Oxford Family Planning Association Study 1997

- **Increasing Parity and Maximum Birth Weight**
Samuelsson EC Am J Obs Gyn 1999
Rinne KM Eur J obs Gyn 1999

Swift SE Am J Obs Gyn 2000

Pelvic Organ Prolapse Etiology

- AGE and MENOPAUSE. Conflicting.

Significant increased risk. Swift SE 2000

No relation. Olsen AL 1997

Progetto Menopause italian study 2000

Pelvic Organ Prolapse Etiology

- Constipation and Straining.

A Case-Control Study.

61% of women with Constipation and Straining will develop POP.

4% of women with NO Constipation and Strain will develop POP.

Spence-Jones C Br J Obstet Gynecol 1994

Pelvic Organ Prolapse Etiology

- HEAVY LIFTING
- OBESITY
- CHRONIC PULMONARY DISEASE
(increase abdominal pressure)

Pelvic Organ Prolapse Etiology

- **HYSTERECTOMY.**

11.6% risk (Prolapse)

1.8% risk (No Prolapse)

Marchionni M J Reprod Med 1999

- Colposuspension (**Enterocele**) Wiskind Am J 1992
- Sacrospinous Fixation (**anterior compartment prolapse**) Bump RC Am J Obs Gyn 1996

Pelvic Organ Prolapse Etiology

- Vaginal Route > Abdominal.

Damage to pudendal nerve.

Benson JT Am J Obs Gyn 1996

- Vaginal = Abdominal

Maher CF Qatawneh Am J 2004

Pelvic Organ Prolapse Etiology

Collagen Abnormalities.

- C.T. disorder associated with prolapse
- Women with genital prolapse ↑ joint hyper mobility
- Women with genital prolapse > proportion type 111 (weaker but flexible) collagen than type 1
- ↓ total collagen, ↑ collagenase, elastolytic

Epidemiology of Surgery for Pelvic Organ Prolapse

1. 50% of women develop prolapse
10-20% of these seek medical treatment
(Beck 1983)
2. 11.1% lifetime risk of a single operation for pelvic
organ prolapse and or urinary incontinence
29.2% reoperation
(Olsen 1997)

Mechanism of normal supports of Uterus and Vagina

Interaction between :

- **Pelvic muscles** (Levator Ani group)

Primary support gives a firm elastic base on which organs rest.

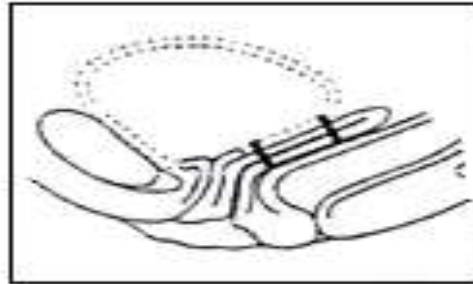
2. **Connective Tissue**

Stabilize the organs in Correct position

What happens during Micturition and Defecation?

Mechanism of normal supports of Uterus and Vagina

- Levels of vaginal supports.
 1. Level I . **Cardinals and Uterosacrals**
 2. Level II. **Arcus Tendineus(white line)**
 3. Level III. **Perineal memb. and Body**

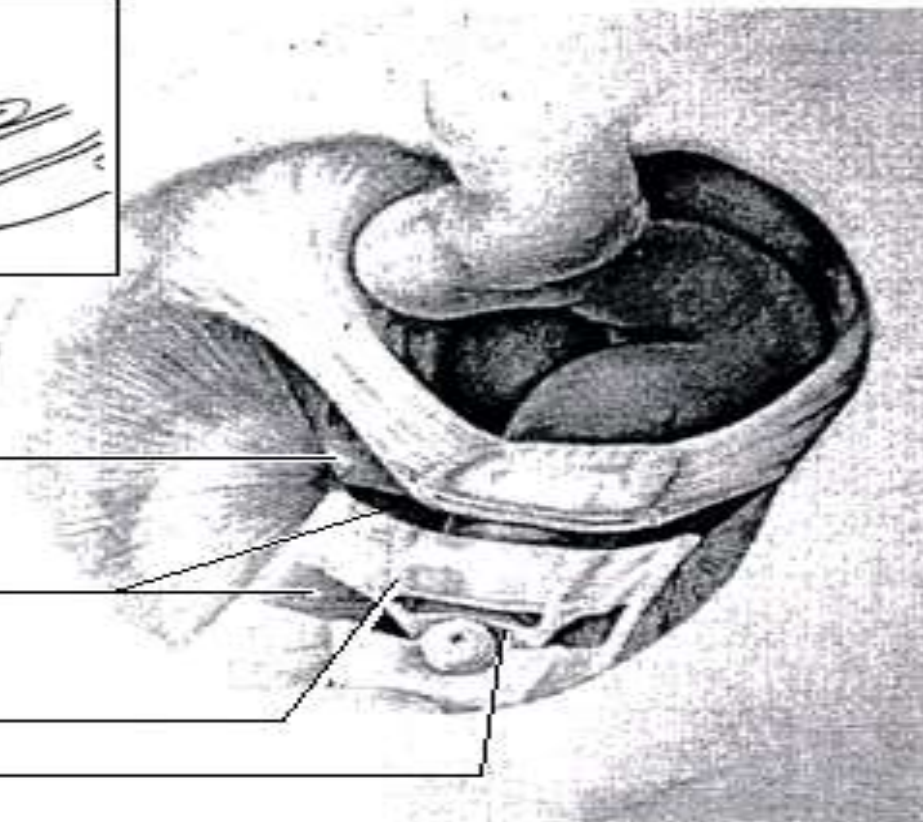


Ischial spine & sacrospinous ligament

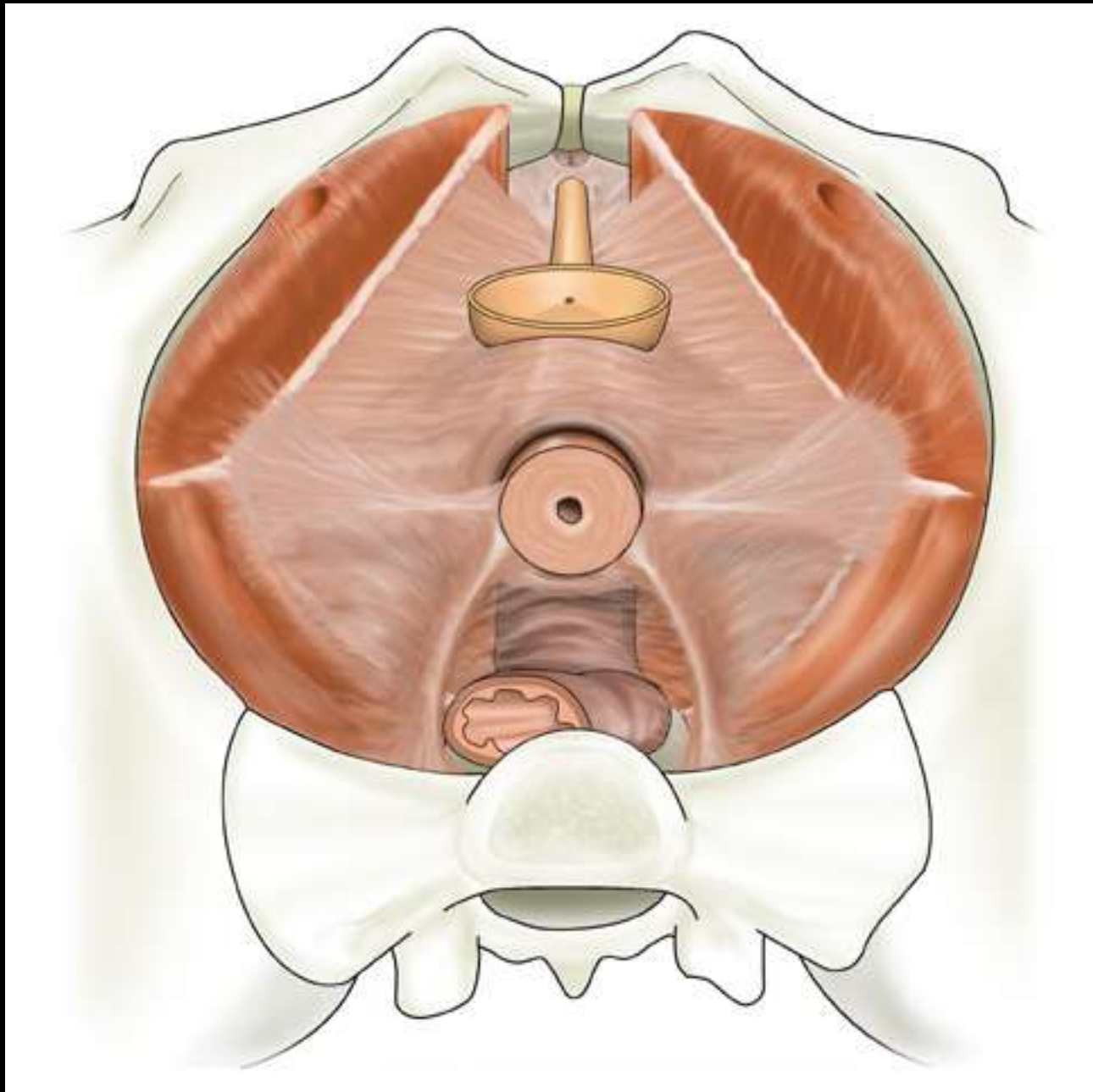
Levator ani

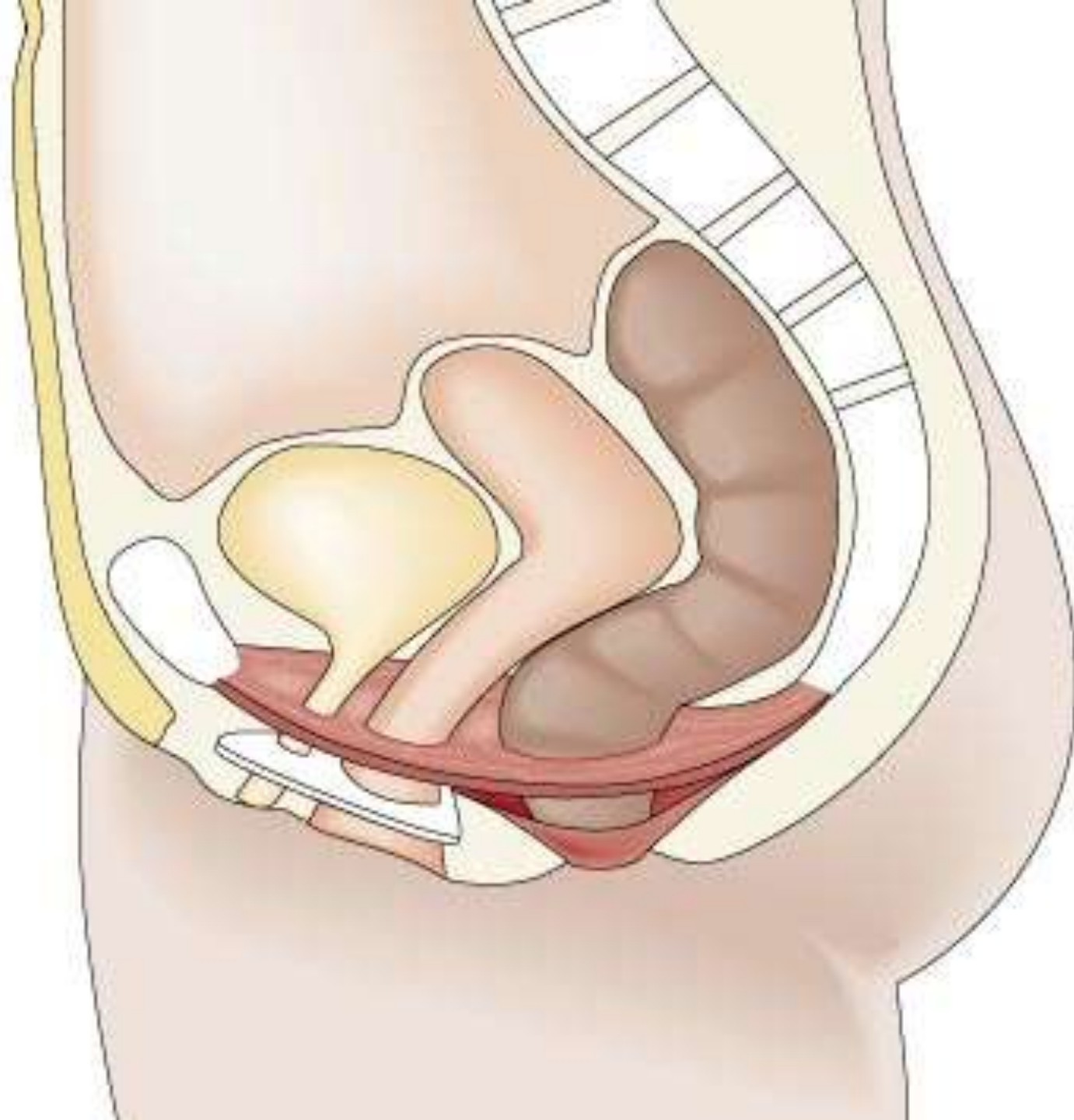
Pubocervical fascia

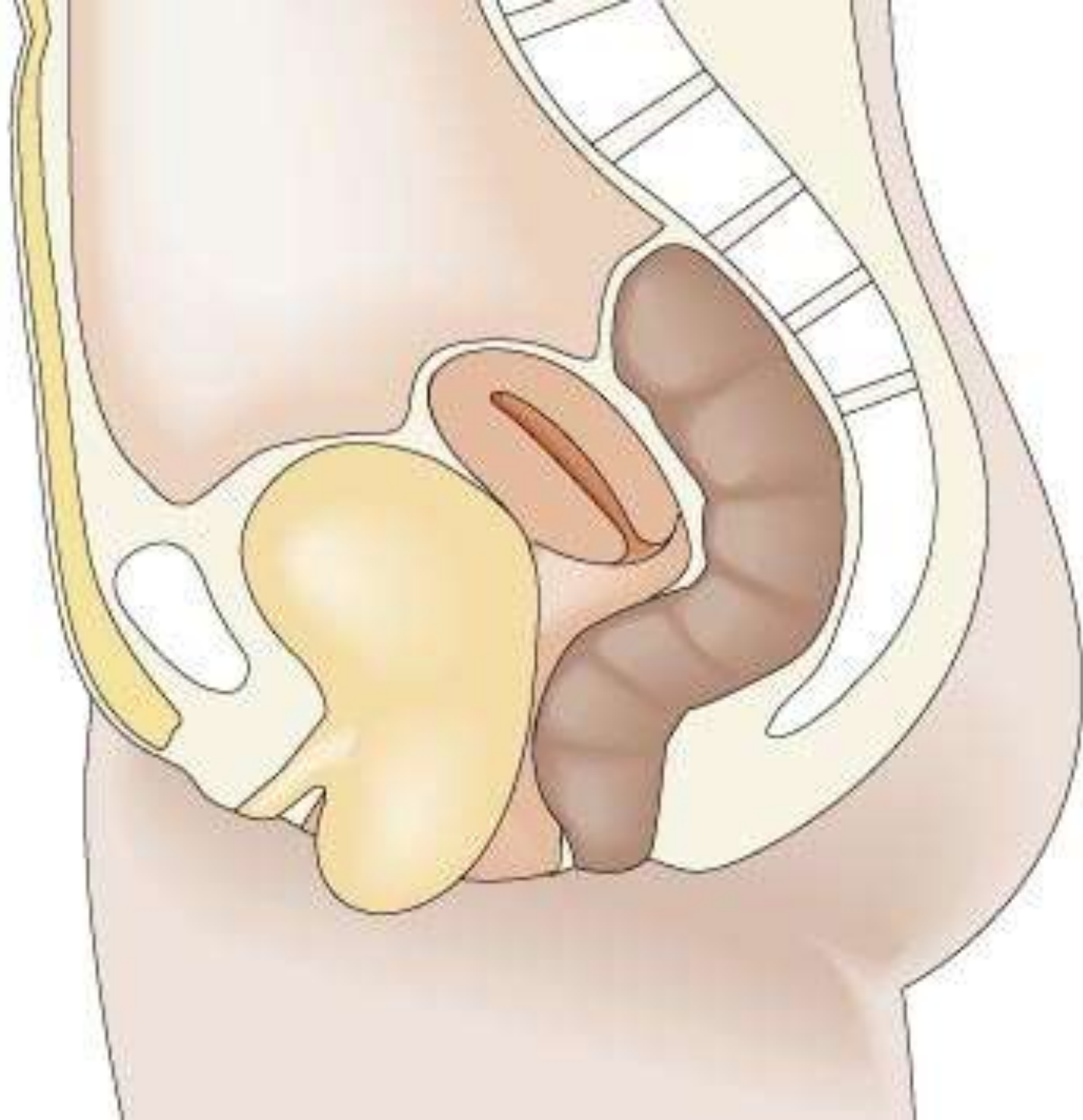
Rectovaginal fascia



Level 1 (apical suspension) and level 2 (lateral attachment) Level 1, paracolpium suspends the vaginal apex from the lateral pelvic sidewall via the uterosacral-cardinal complex. Level 2, the anterior vaginal wall is attached laterally to arcus tendinous fascia pelvis and the posterior vaginal wall is attached laterally to the fascia overlying the levator ani muscle. Reproduced with permission from: DeLancey, JO. Anatomic aspects of vaginal eversion after hysterectomy. *Am J Obstet Gynecol* 1992; 166(6 Pt 1):1717. Copyright © 1992 Elsevier Inc.

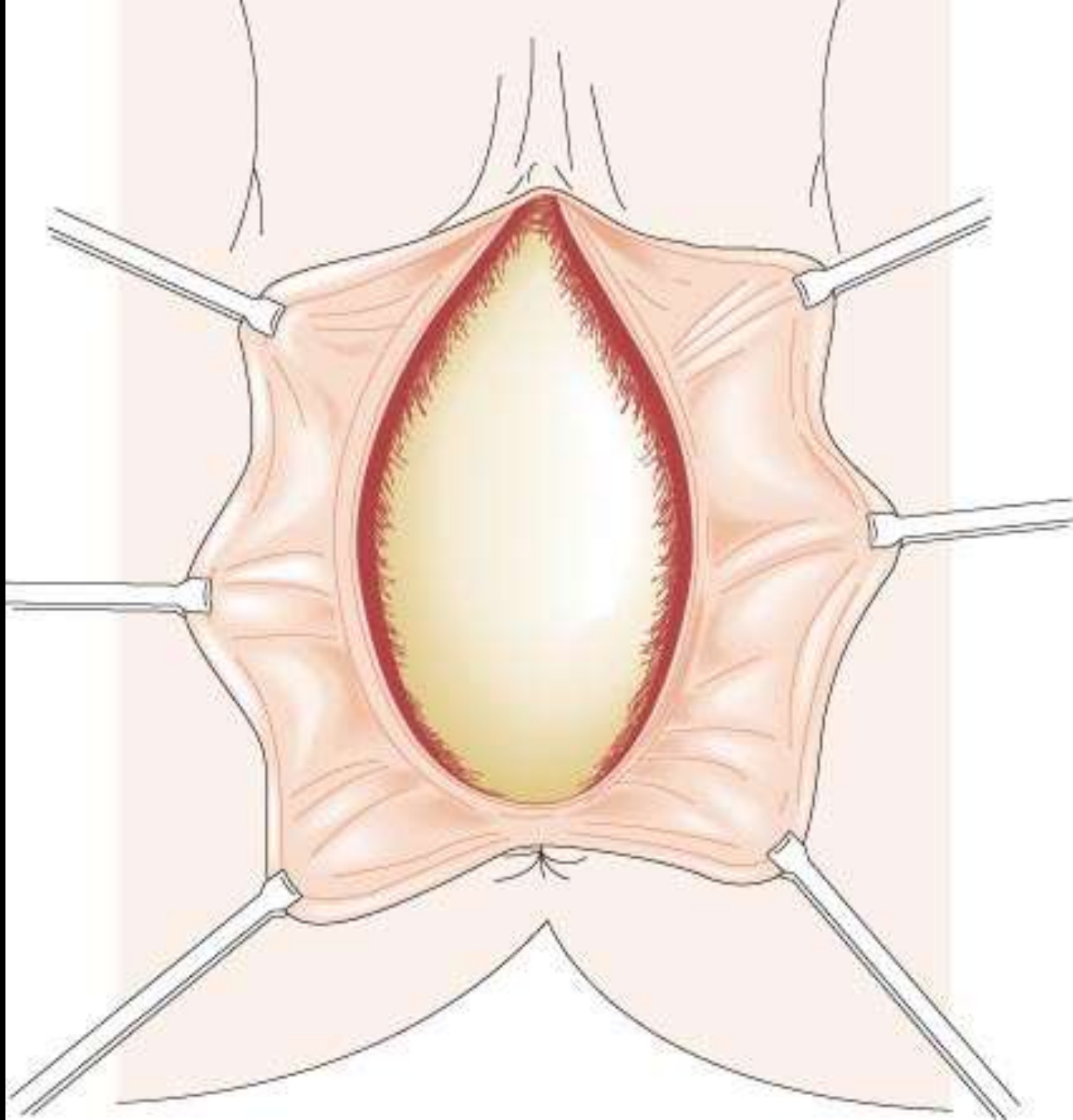






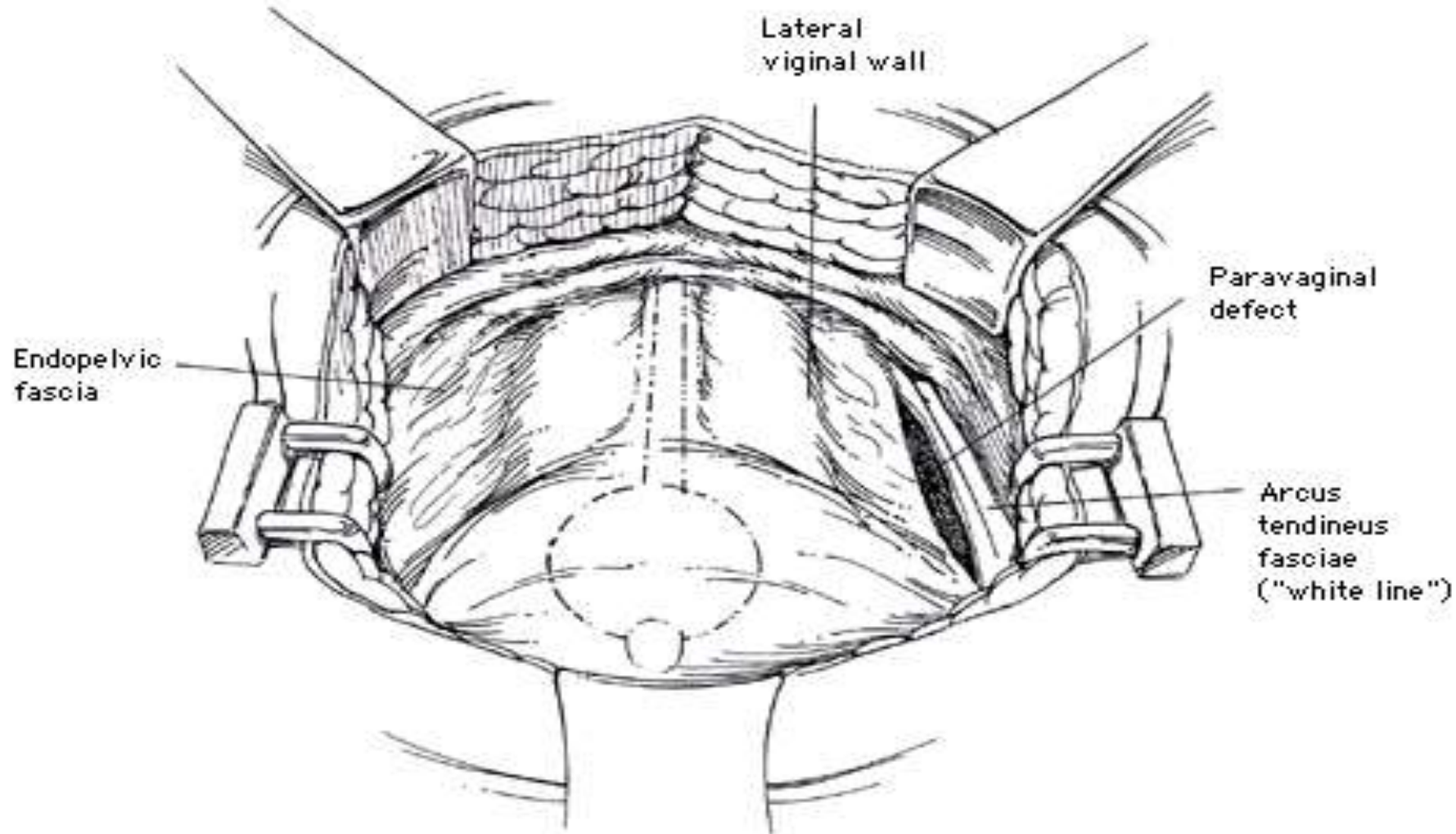
Anterior Vaginal Wall Prolapse Cystocele

- Pathologic descent of the anterior vaginal wall and the overlying bladder base.
- Two Types
 1. Distension
 2. Displacement

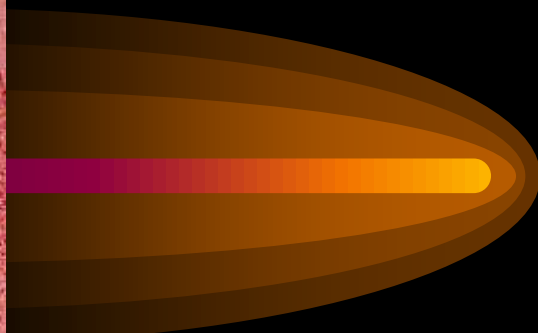
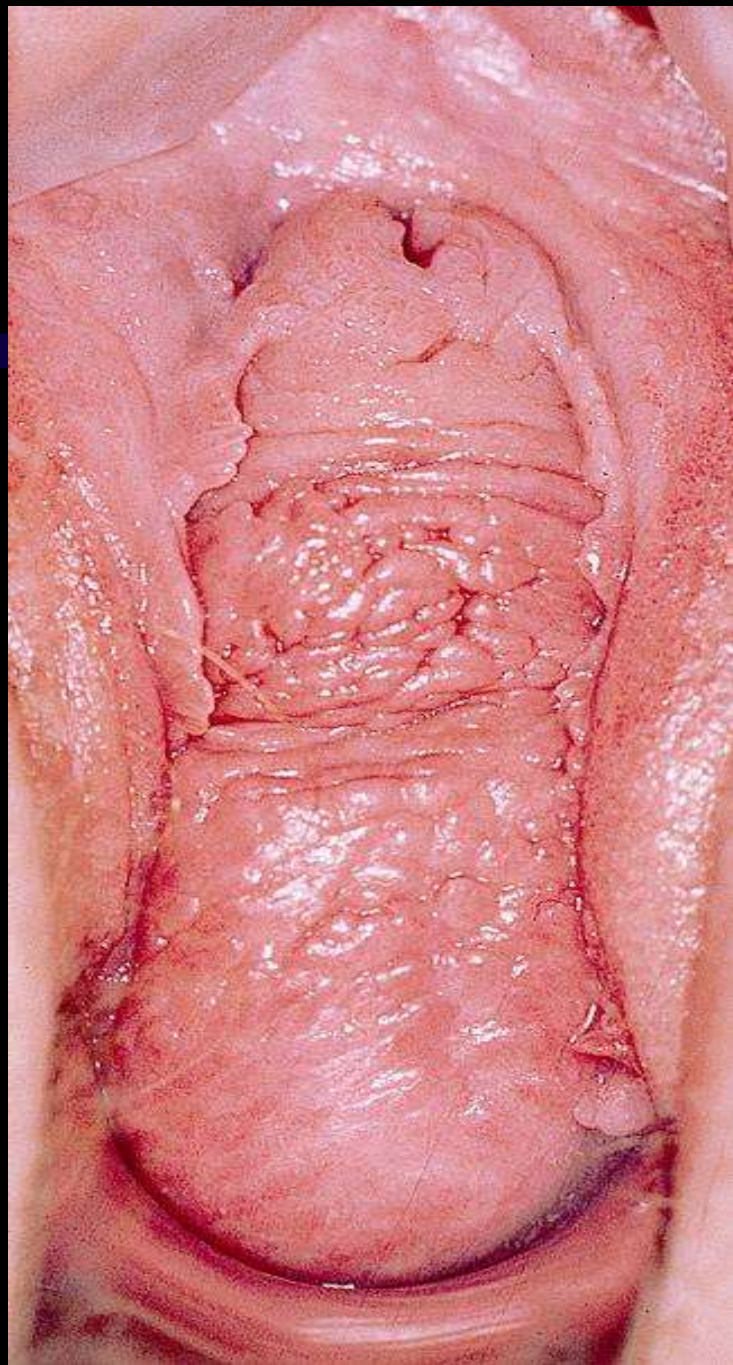


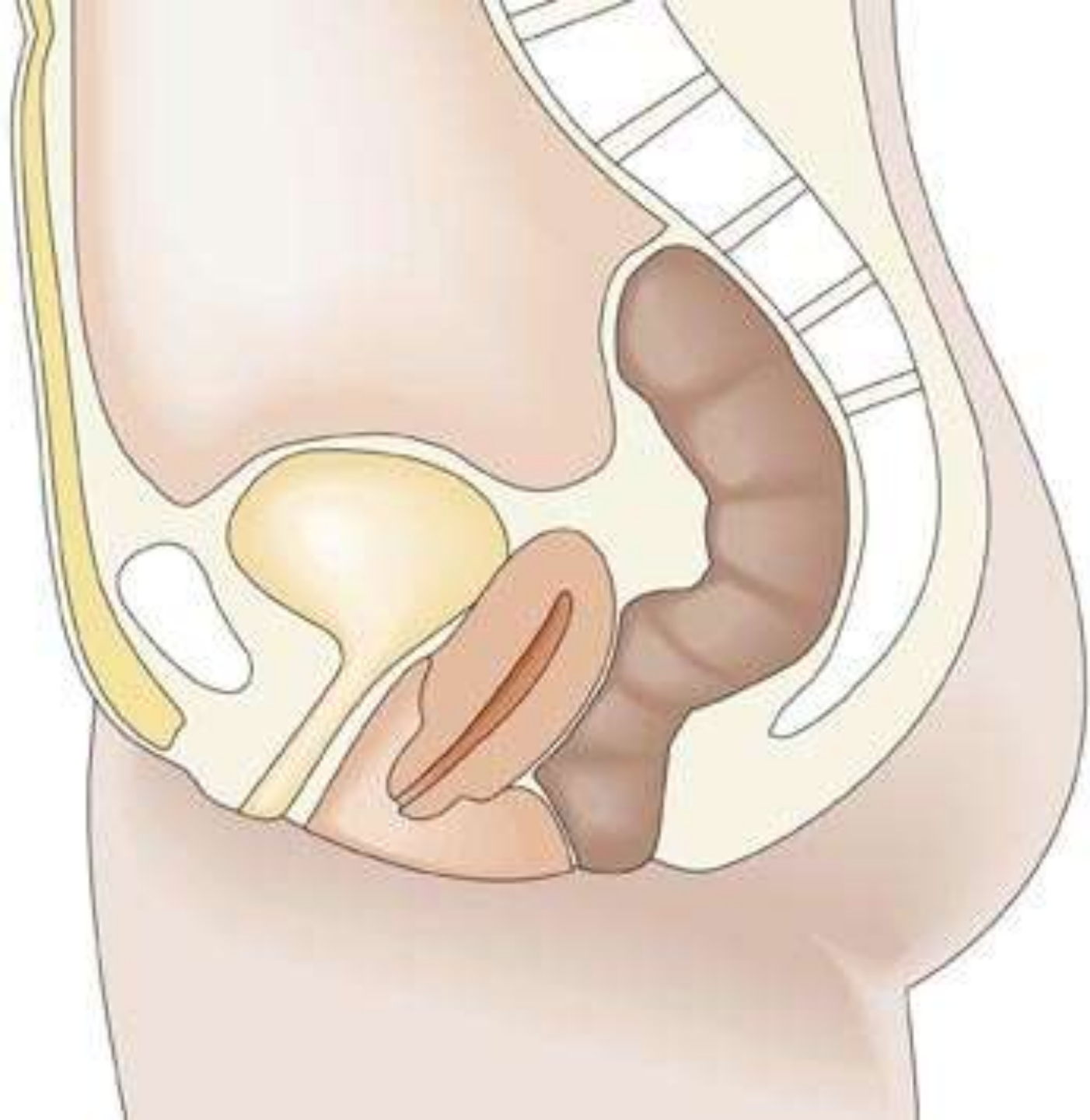


Cystocele and rectocele.



Paravaginal defect Robinson, D, Norton, PA. Diagnosis and Management of Urinary Incontinence. In: Gynecologic Surgery. William, WM, Stovall, TG (Eds), Churchill Livingstone, New York 1996. p.718.





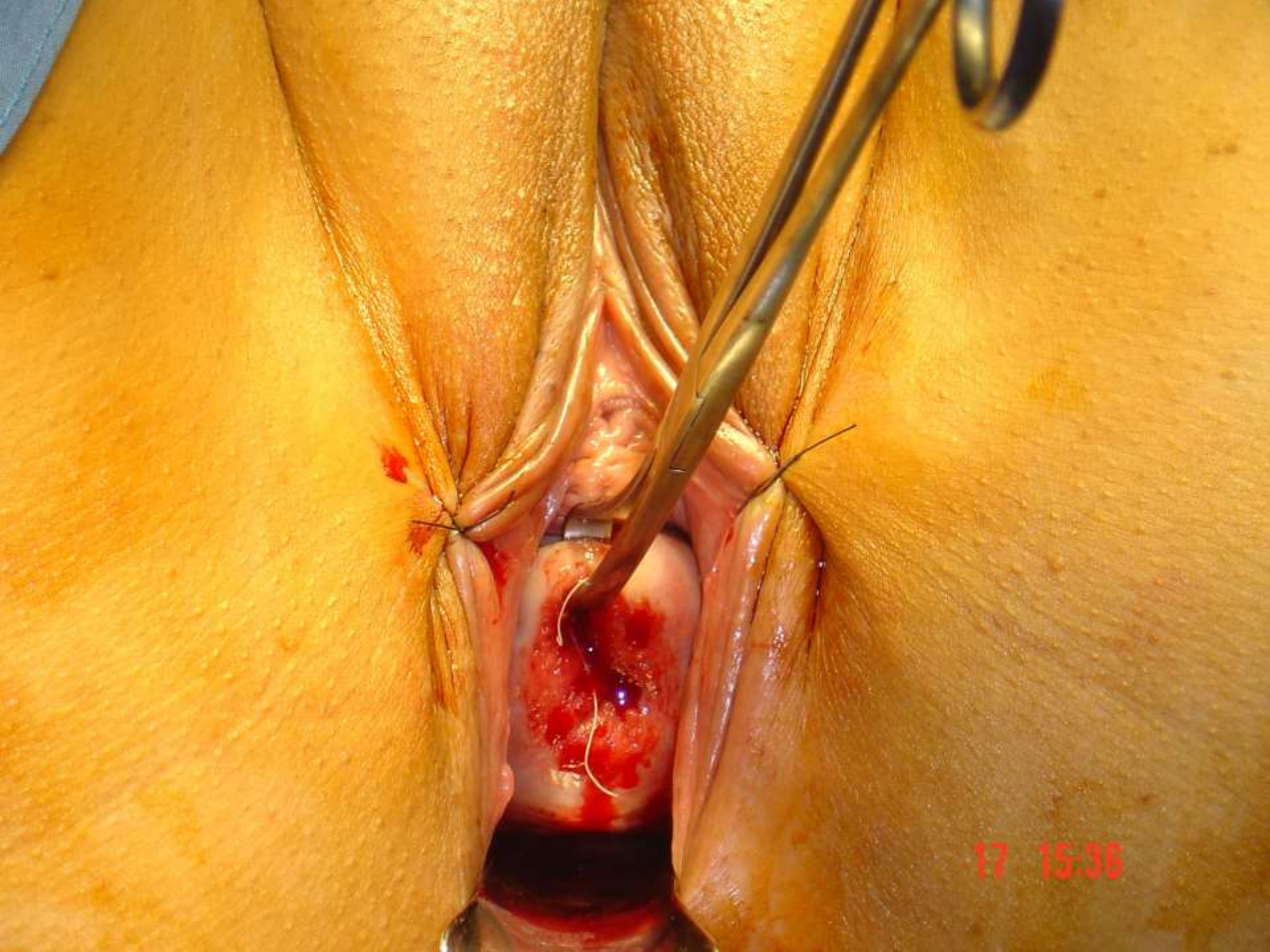
Apical Prolapse Uterine and Vault

- Damage to the Uterosacral-Cardinal ligament Complex.

Uterine Prolapse

- Loss of the integrity of the anterior and posterior vaginal walls.

Post hysterectomy or vault

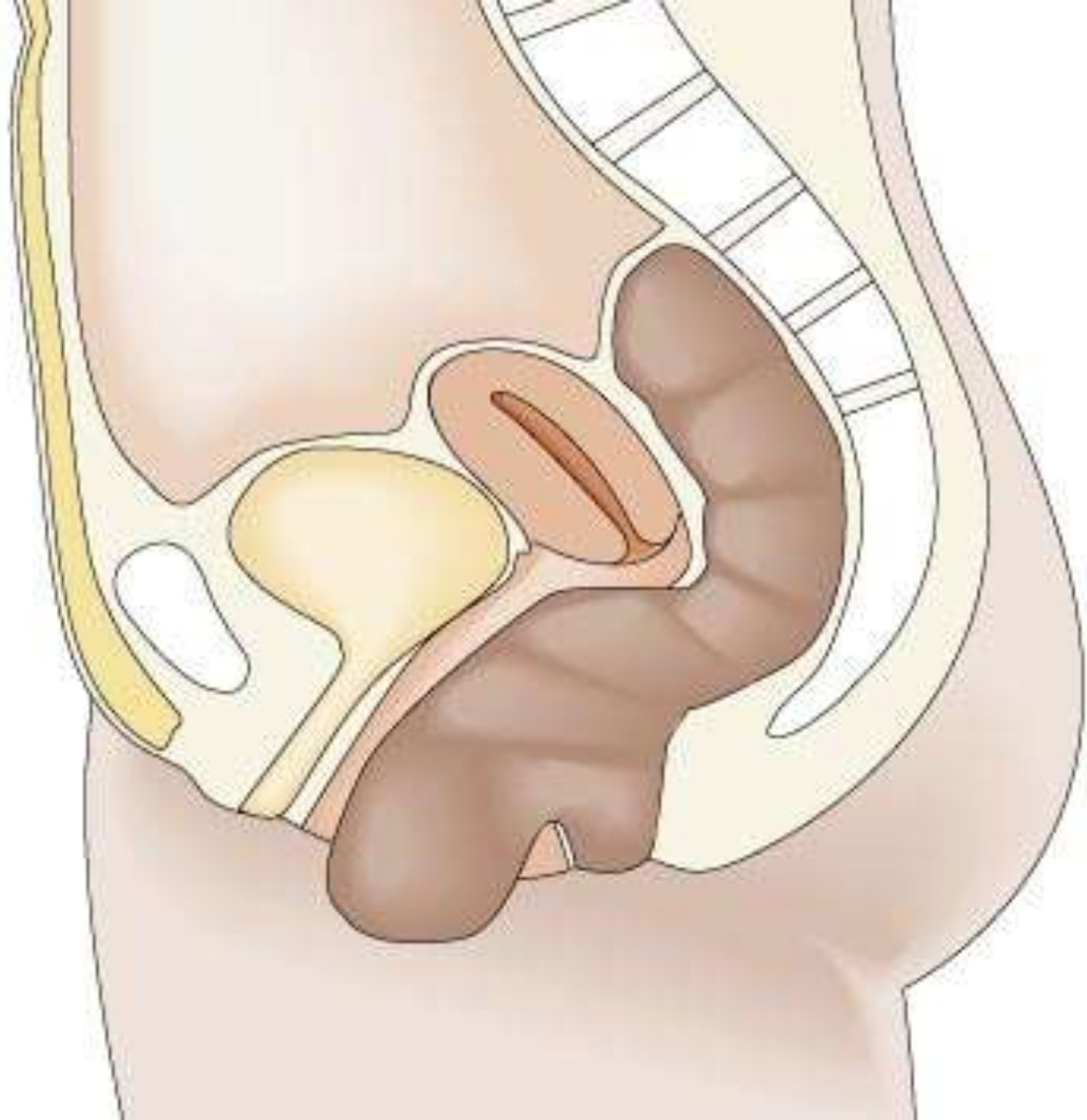


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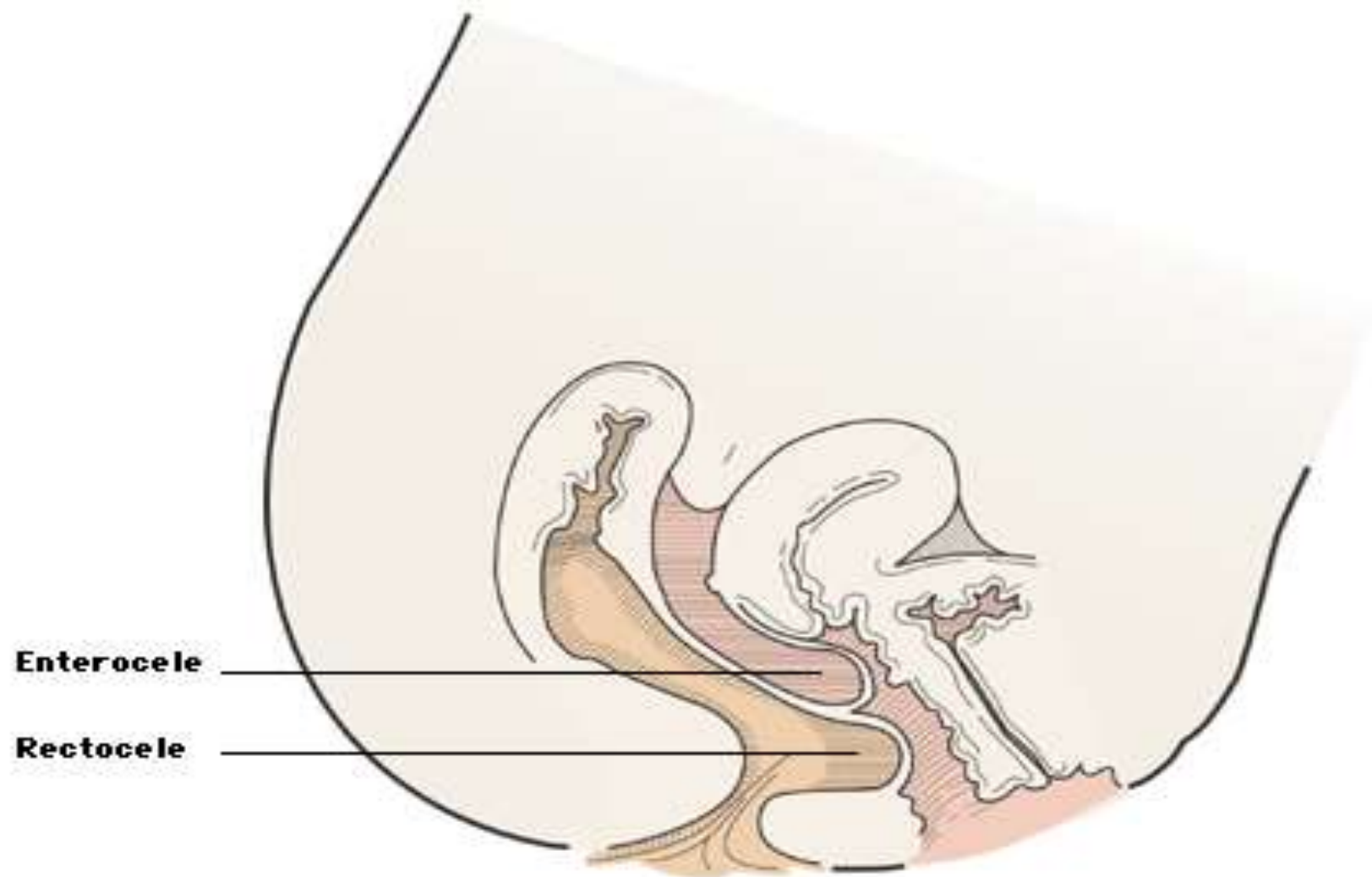
29 13:57



Posterior Vaginal Wall Prolapse Rectocele and Enterocele

- **Enterocele:** is a hernia in which the peritoneum is in contact with the vaginal mucosa. **Absent endopelvic fascia.**
- **Rectocele:** Defect in the Rectovaginal Septum

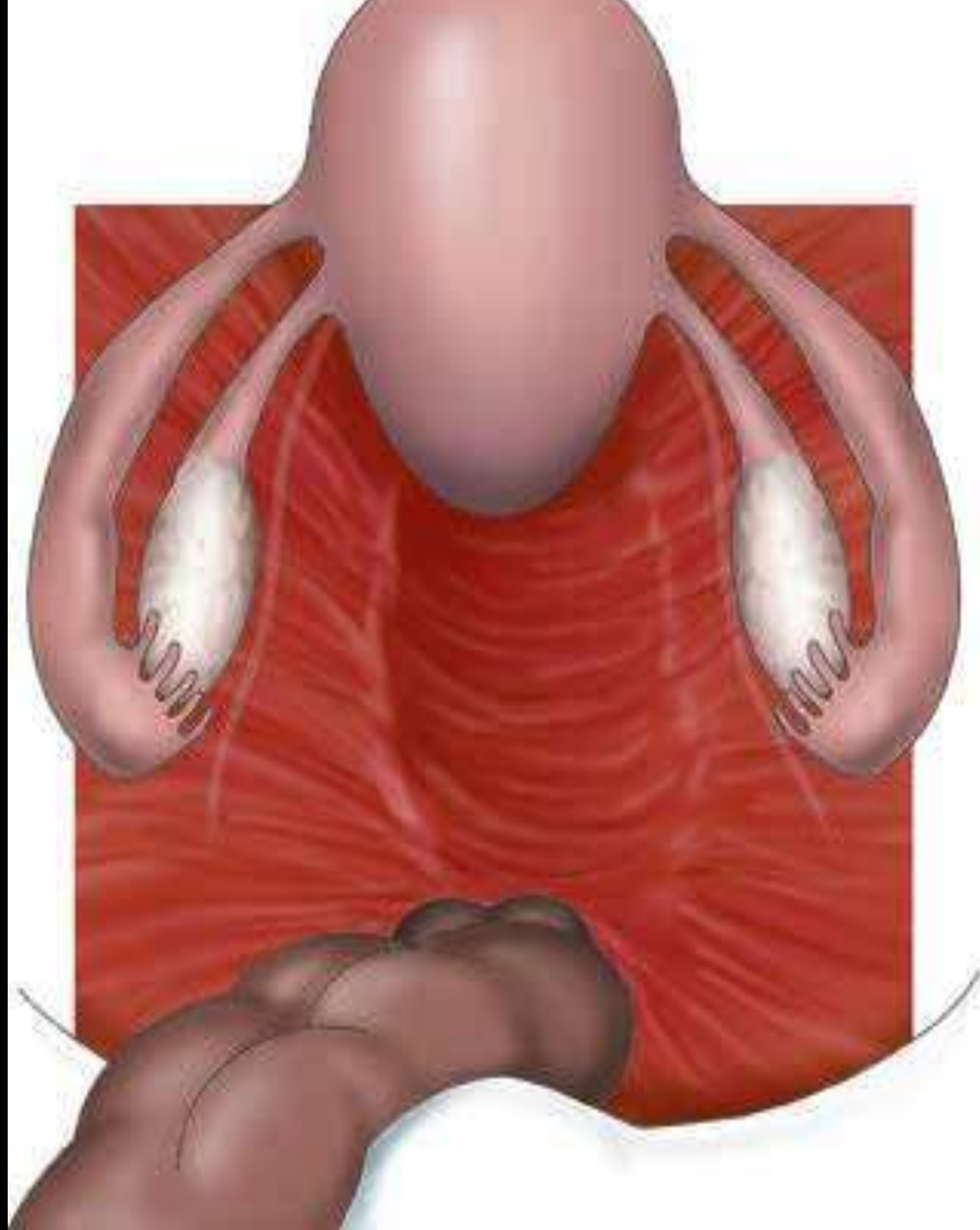
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Enterocele

Rectocele

Sagittal section of pelvis, showing relative position of rectocele and enterocele Adapted from: Te Linde's Operative Gynecology, 6th Edition, Matingly RF and Thompson JD, editors. J.B. Lippincott Co., Philadelphia, 1985. Copyright © 1985 Lippincott Williams & Wilkins





General Symptoms associated prolapse

- Bulge, heaviness, or dragging
- backache
- vaginal dryness or irritation
- need to push the prolapse back after straining (defecation)
- sexual activity embarrassing or painful

Urinary tract dysfunction and prolapse

Stress urinary incontinence

Bladder neck hyper mobility

Urinary frequency and urgency

Occult stress incontinence

Voiding dysfunction

Recurrent UTI

Ureters

Symptoms related to rectoceles

- Incomplete bowel emptying
- obstructed defecation
- constipation
- inability empty rectum without reducing prolapse
- fecal incontinence if rectal prolapse

Patient Information

Data Collection Date

No details available - record may

(Number)

History

General Surgery History

Examination

Urodynamics

Surveys

Surgery/Review/Summary

Pelvic Floor History

Source

(0 = None; 1 = Occasional; 2= Frequent)

Presenting Problems

Stress Incontinence

Urethral Pain

Constipation

Urgency

Bladder Pain

Rectal Soiling

Urge Incontinence

Dysuria

Obstructed Defaecation

Leakage Frequency

Haematuria

Chronic Cough

Leakage Severity

Post Dribbling

Aware Of Prolapse

Leakage Duration

Strains To Void

Sexually Active

Day Time Frequency

Incomplete Emptying

Dyspareunia

Nocturia

Insensible Leakage

Lack Sensation Sex

General History

First Degree Relative With Same Problem

Hormone Replacement Therapy

Quality of Life

Cigarettes Per Day

Contraception

Menstrual Status

Smears

Urinary Tract Infection

⌵ Patient Information



Data Collection Date

No details available - record may

(Number)

- History
- General Surgery History
- Examination
- Urodynamics
- Surveys
- Surgery/Review/Summary

Medical history

Drugs

Allergies

Obstetric History Vaginal Abdominal

Pelvic Surgery	Year	Surgery

New

Del

Other Surgery

Patient Information



Data Collection Date

No details available - record may

1 (Number)

- History
- General Surgery History
- Examination**
- Urodynamics
- Surveys
- Surgery/Review/Summary

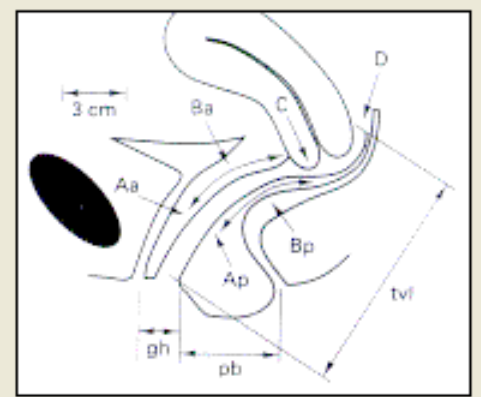
Date Height (M) Weight (KG) 0

Abdominal Examination (Tenderness, Masses, Scars, Hernias)

Vaginal Examination

Stage II 0 0 0 / 0 0 0

Point Aa	<input type="checkbox"/>	Point Ba	<input type="checkbox"/>	Point C	<input type="checkbox"/>
Genital Hiatus	<input type="checkbox"/>	Perineal Body	<input type="checkbox"/>	Total Vaginal Length	<input type="checkbox"/>
Point Ap	<input type="checkbox"/>	Point Bp	<input type="checkbox"/>	Point D	<input type="checkbox"/>



Vaginal Examination

Pain	<input type="text"/>	Uterus	<input type="text"/>	Anal Sphincter Tone	<input type="text"/>
Epithilium	<input type="text"/>	Stress Incontinence	<input type="text"/>	S234 Outflow	<input type="text"/>
Vaginal Capacity	<input type="text"/>	Bladder Neck	<input type="text"/>		



No details available - record may not be saved yet.

65

67

(AutoN)

Urodynamics Urodynamics Ward Test Urine

Date

Free Flow Rate (ML/SEC)

Volume Voided (ML)

First Residual (ML)

Cystometry (ML)

Urgency (ML)

Capacity (ML)

Pressure Rise Fill (cmH2O)

Pressure Rise Provoc (cmH2O)

Cystometry Pattern

Voiding (ML)

Maximum Voiding Pressure

Maximum Flow Rate (ML/Sec)

Volume Voided (ML)

Residual Pattern

Incontinence

Extent Cause

Posture

Max. Urethral Closing Pressure

Bladder Neck Imaging

Diagnosis

Diagnosis Other

Plan

- | | | |
|--|--|--|
| <input checked="" type="checkbox"/> Urodynamics | <input checked="" type="checkbox"/> Antibiotics | <input checked="" type="checkbox"/> Anticholinergics |
| <input checked="" type="checkbox"/> Swabs | <input checked="" type="checkbox"/> Ultrasound Scan | <input checked="" type="checkbox"/> Cystoscopy |
| <input checked="" type="checkbox"/> Surgery | <input checked="" type="checkbox"/> IX Fecal Incontinence | <input checked="" type="checkbox"/> Cisc |
| <input checked="" type="checkbox"/> Urine Mcs | <input checked="" type="checkbox"/> Pelvic Floor Exercises | <input checked="" type="checkbox"/> IVP |
| <input checked="" type="checkbox"/> Urine Cytology | <input checked="" type="checkbox"/> Bladder Retraining | <input checked="" type="checkbox"/> Vagifem |

Review Pessary (MM)

Other

Specialist Surgeries

No details available - record may not be saved yet.

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(AutoN

Where

Anaesthetic

Date

Surgeon

Blood Loss (MLS)

Operating Time (Minutes)

Save

Surgeries

<<

>>

Sling
TVT
Colposuspension
urethrolysis
Laparoscopy
Anterior Vaginal Repair

Complications

<<

>>

Cystotomy
Enterotomy
Urinary Tract Infection
EBL > 500mls
Ureteric Injury
Blood Transfusion

Grading System

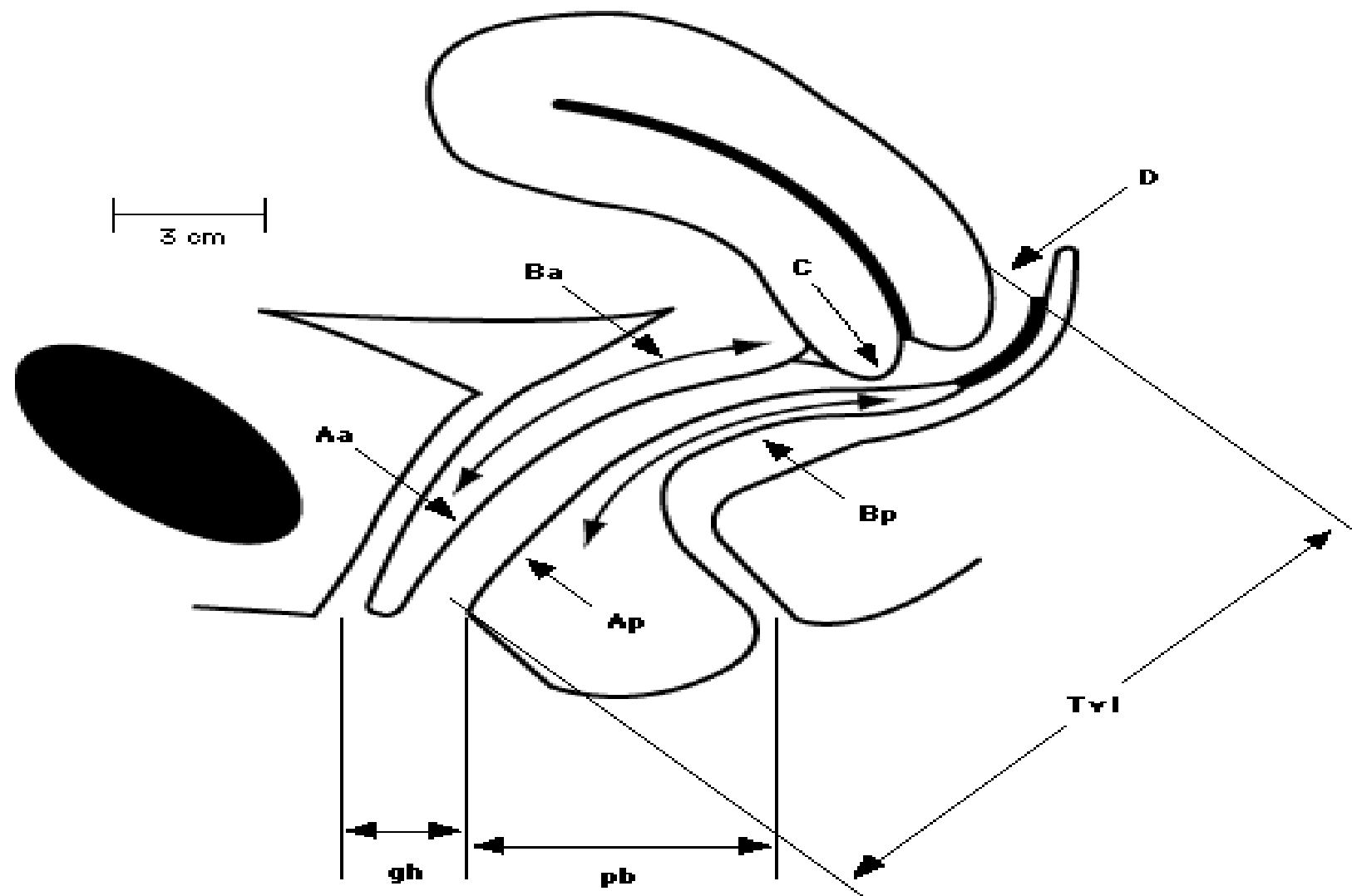
- **Cystocele** Anterior wall
 - 1st degree . Half way to the Hymen
 - 2nd degree . To the Hymen
 - 3d degree. Outside the Hymen
- **Uterine or Vault** Cervix or Vaginal apex
 - 1st degree.
 - 2nd degree.
 - 3d degree.

Grading System

- **Rectocele** Posterior wall
 - 1st degree.
 - 2nd degree.
 - 3d degree.
- **Enterocoele** enterocele sac
 - 1st degree
 - 2nd degree
 - 3d degree

New Classification POP-Q System

- ICS 1996 Bump et al.
Standardization of terminology
Pelvic Organ Anatomy
Site – Specific
Quantitative
Compartments or Segments.



Pelvic organ support quantitation Six sites (points Aa, Ba, C, D, Bp, Ap), genital hiatus (gh), perineal body (pb), and total vaginal length (tvl) used for pelvic organ support quantitation. (Reproduced with permission from Bump, RC, Mattiasson, A, Bø, K, et al, Am J Obstet Gynecol 1996; 175:10. Copyright ©1996 Mosby, Inc.)

Pelvic Organ Prolapse Staging†

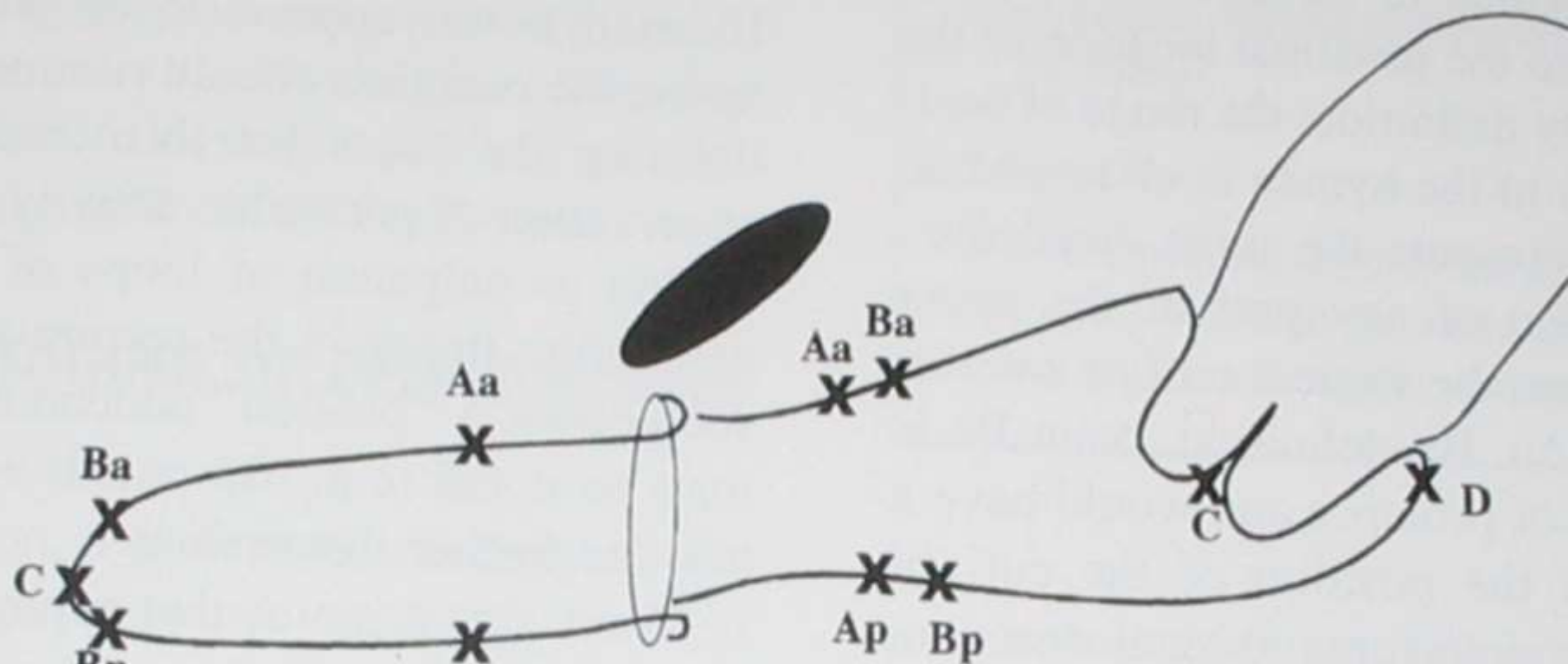
Stage 0	No prolapse Aa, Ba, Ap, Bp are -3 cm and C or D $\leq -(tvL - 2)$ cm
Stage 1	Most distal portion of the prolapse -1 cm (above the level of hymen)
Stage 2	Most distal portion of the prolapse ≥ -1 cm but $\leq +1$ cm (≤ 1 cm above or below the hymen)
Stage 3	Most distal portion of the prolapse $> +1$ cm but $< +(tvL - 2)$ cm (beyond the hymen; protrudes no farther than 2 cm less than the total vaginal length)
Stage 4	Complete eversion; most distal portion of the prolapse $\geq + (tvL - 2)$ cm

Aa = Point A of anterior wall; Ba = point B of anterior wall; Ap = point A of posterior wall; Bp = point B of posterior wall; -, above the hymen; +, beyond the hymen; tvL = total vaginal length.

† Reproduced with permission from Harvey, M-A, Versi, E. Urogynecology and pelvic floor dysfunction. In: Kistner's Gynecology and Women's Health, 7th ed, Ryan, KJ, Berkowitz, RS, Barbieri, RL, Dunaif, A (Eds), St. Louis, Mosby 1999. Copyright © 1999 Elsevier.

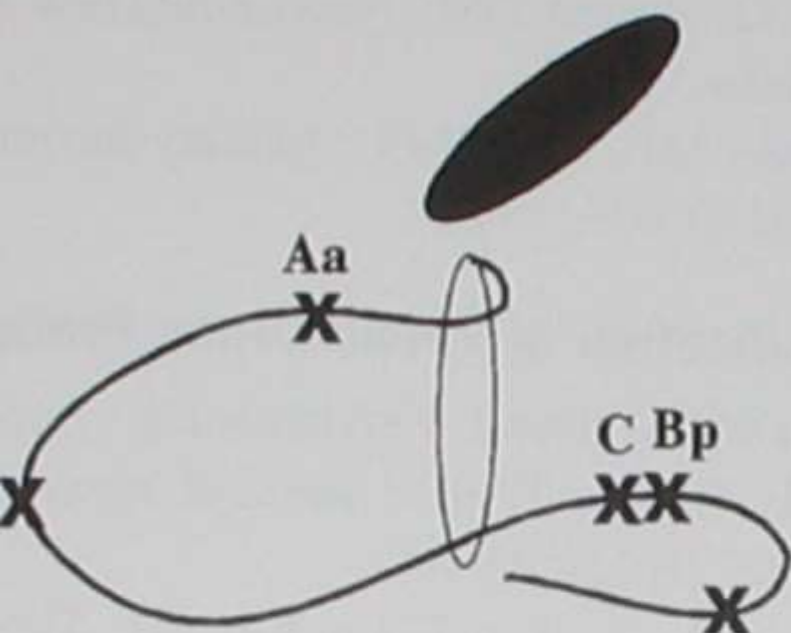
Aa	Ba	C
gh	Pb	tvL
Ap	Bp	D

Three-by-three grid used to express the quantified pelvic organ prolapse (POP-Q) system Aa = point A of the anterior wall; Ba = point B of the anterior wall; C = cervix or cuff; D = posterior fornix; gh = genital hiatus; pb = perineal body; tvL = total vaginal length; Ap = point A of the posterior wall; Bp = point B of the posterior wall. Reproduced with permission from Harvey, M-A, Versi, E. Urogynecology and pelvic floor dysfunction. In: Kistner's Gynecology and Women's Health, 7th ed, Ryan, KJ, Berkowitz, RS, Barbieri, RL, Dunaif, A (Eds), St. Louis, Mosby 1999. Copyright © 1999 Elsevier.

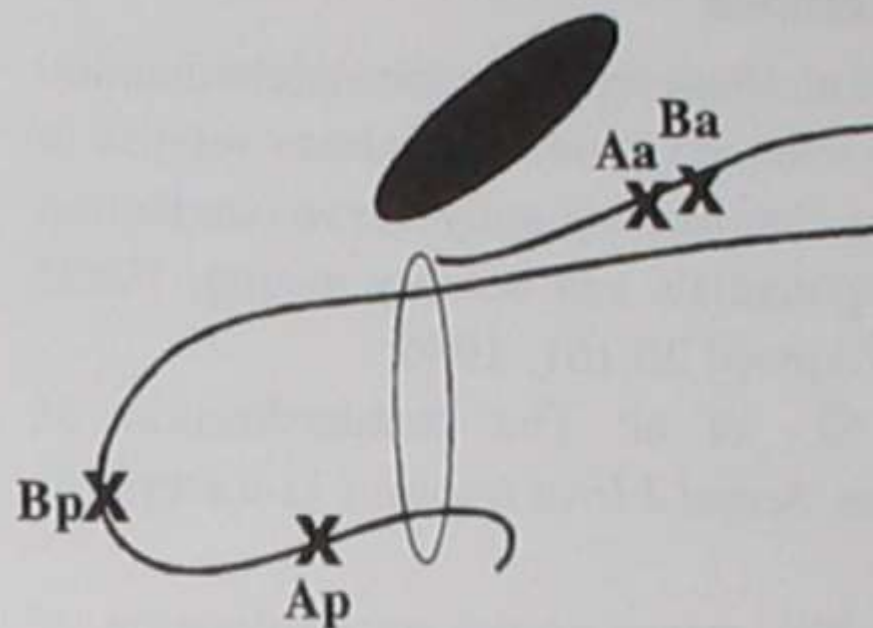


+3 Aa	+8 Ba	+8 C
4.5 gh	1.5 pb	8 tvl
+3 Ap	+8 Bp	--

-3 Aa	-3 Ba	-8 C
2 gh	3 pb	10 tvl
-3 Ap	-3 Bp	-10 D



+3 Aa	+6 Ba	-2 C
4.5 gh	1.5 pb	6 tvI
-3 Ap	-2 Bp	--



-3 Aa	-3 Ba	-6 C
4.5 gh	1 pb	8 tv
+2 Ap	+5 Bp	--

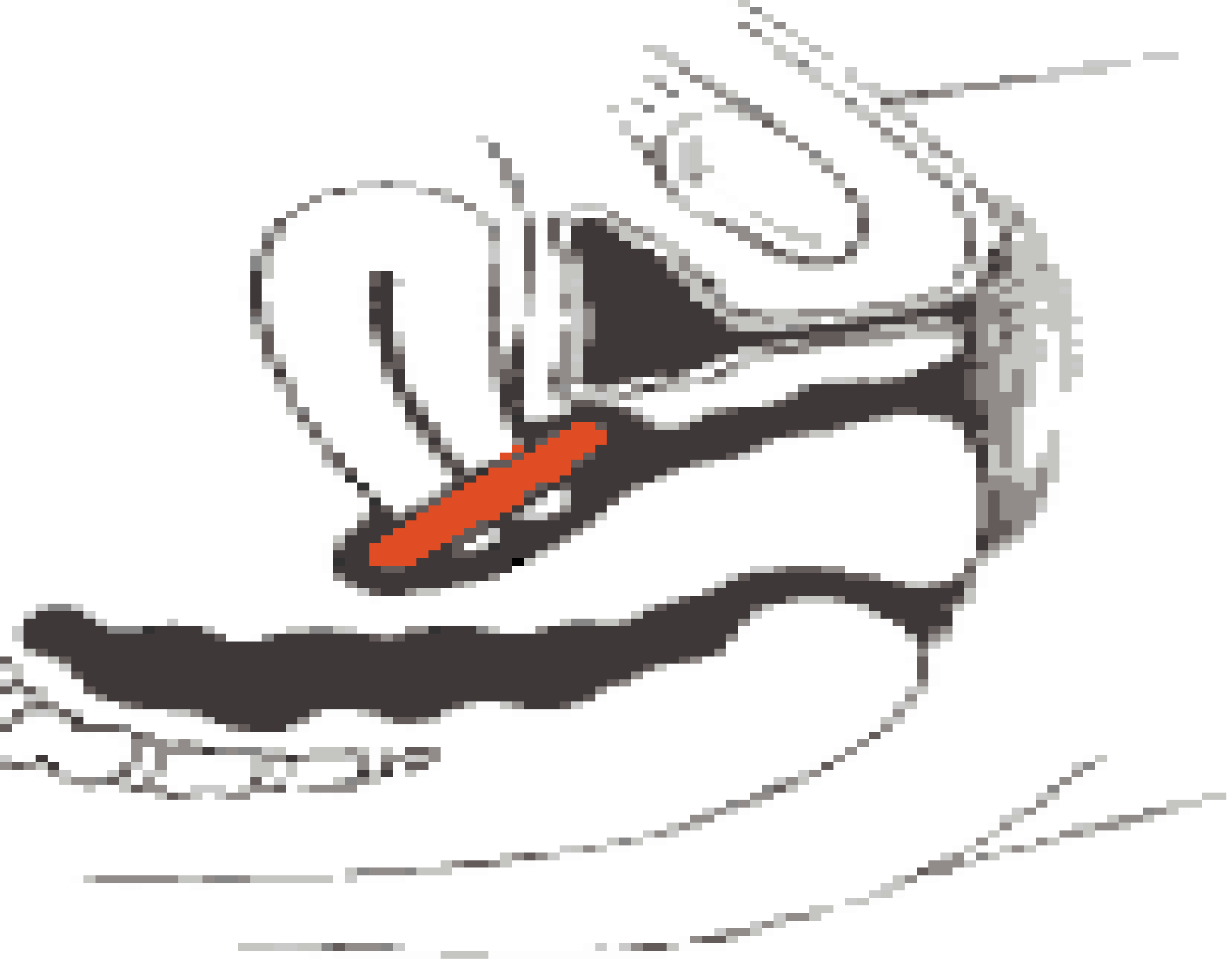
A. Grid and line diagram of predominant anterior support defect. Leading poi

Options of Management

- No Treatment (pelvic floor exercise)
- Conservative: such as
 Physiotherapy or Pessary
- Surgical Treatment



MILEX



Aims of prolapse surgery

- **Alleviate symptoms**
- **Restore normal anatomy**
- **Restore normal visceral function**
- **Avoid new bladder or bowel symptoms**
- **Preserve sexual function**
- **Avoid surgical complications**

Classification of prolapse surgery

- **Vaginal**

Primary

Vaginal hysterectomy
Anterior/Posterior repair

Secondary

Sacrospinous fixation
Iliococcygeus fixation
Uterosacral fixation

Recurrent+/- reinforcement
Synthetic mesh/autologous/
donor/Xenograft

- **Abdominal**

Primary

Paravaginal repair
Hysteropexy

Secondary +/- reinforcement

Sacrocolpopexy
Uterosacral/Sacrospinous
fixation

- **Laparoscopic**

All of the Abdominal
procedures +/-
reinforcement

Conclusions

- Pelvic organ prolapse is common
- Results from injury to soft tissue and nerves
- Childbirth most significant association
- Treatment requires understanding of anatomic relationships
- Treated with a combination of physio/pessary and often complex surgery