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A Rare Case of Spontaneous Pelvic Inflammatory Disease Caused by Group A Streptococcus

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Background

- Pelvic inflammatory disease (PID) is an infection of the upper genital tract typically associated with STIs and vaginal anaerobes (>85% of cases). [1]
- Much less commonly, group A Streptococcus (GAS), a frequent respiratory and skin pathogen, is associated with PID after invasive gynaecological procedures (IUD insertion, instrumentation, peripartum).
- In cases of spontaneous PID, without identifiable mechanism of transmission, GAS bacterium is exceedingly rare. There are only a handful of cases identified in the literature occurring in non-pregnant or non-puerperal women.[2,3,4]

Clinical Case

- A 38-year-old G6P4 woman presented to the emergency department of a regional tertiary centre with acute onset lower **abdominal pain, nausea and fevers**.
- On exam she was **hypotensive, tachycardic and febrile**. Abdomen was soft. There was inferior abdominal **percussion and rebound tenderness with voluntary guarding**. *A pelvic examination was not performed.*
- Fluid resuscitation and empirical antibiotics were administered.
- She took no regular medications and her medical history was unremarkable.
- She menstruated regularly – LMP 3 days prior to presentation.
- Nil history or symptoms of STIs
- Used condoms for contraception with her sole long-term sexual partner. Nil IUD in situ.
- Nil recent surgeries or gynaecological instrumentation.
- CST was up to date.
- Denied antecedent respiratory infection or coryzal symptoms but reported **family contacts (partner and children) suffering pharyngitis**.
- She had engaged in **oro-genital sexual intercourse with her partner** in recent history.

Investigations

At presentation

Bloods:

- **WCC – 24.1 x 10^9/L** (ref. 3.5–11 x10^9/L)
- **Neutrophils – 23.4 x 10^9/L** (ref. 1.7-7 x10^9/L)
- **CRP – 109 mg/L** (ref. <3mg/L)
- β-hCG – negative
- Electrolytes, renal, liver function – normal
- Blood cultures – nil growth
- Urine dipstick/MCS - unremarkable

Imaging:

- Pelvic Ultrasound: **Free fluid in the pelvis. Inflamed tender appendix (6.5 mm). Varicosities in the adnexal regions with pelvic congestion.**
- CTAP: Bilateral renal calculi, however nil distal ureteric calculus accounting for the patient's pain. Otherwise unremarkable.
- Chest X-Ray: Unremarkable.

During admission

- **Antistreptolysin O titre – 514 IU/ml** (sig. if > 200IU/ml)
- **Anti Dnase B Ab – 696 IU/ml** (sig. if > 200IU/ml)

Vaginal Swab

- **Growth of GAS**/candida albicans/gardnerella vaginalis
- Trichomonas vaginalis – Negative
- Chlamydia trachomatis – Negative
- Neisseria gonorrhoea – Negative

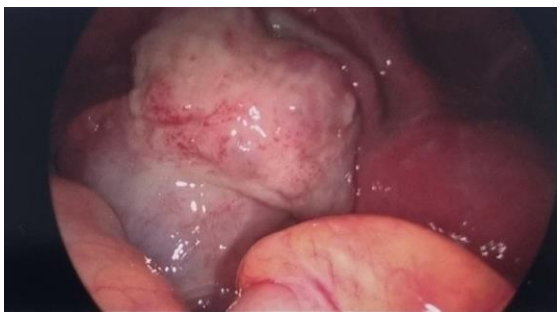

Figure 1 – Laparoscopic appearance of the left ovary with injected vasculature, salpingitis and adjacent purulent fluid

Management

- General surgery performed a diagnostic laparoscopy finding a macroscopically normal appendix with some reactive inflammation, **salpingitis, pelvic congestion and purulent fluid in the pouch of Douglas**. Bowel, gallbladder, liver were unremarkable.
- Gynaecology on-call confirmed an **intraoperative opinion of PID.**
- Fluid from intraperitoneal washout was collected which grew **pan-sensitive GAS.**
- Antibiotic therapy was adjusted to IV Benzyl-Penicillin 1.8g Q4hrly

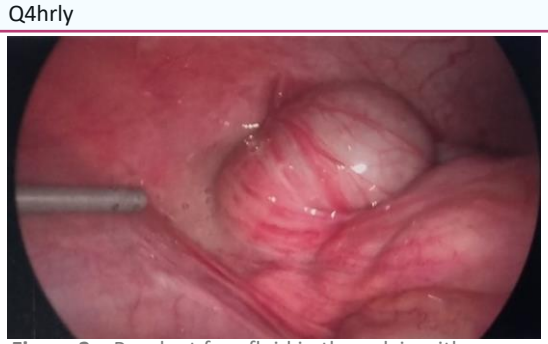

Figure 2 – Purulent free fluid in the pelvis with surrounding reactive inflammation

Progress and Follow-up

- Discharged after IV antibiotics led to clinical and biochemical improvement.
- Histopathology confirmed microscopic appearance of appendicitis, *but* with features suggestive of inflammation extending from surrounding structures as the neutrophils were predominantly present on the outer surface.
- Reviewed in the gynaecology outpatient clinic 6 weeks later. She was well, had resumed normal life and sex with no concerns. A repeat pelvic USS suggested an appearance of uterine adenomyosis but was otherwise unremarkable.

Discussion & Conclusion

- GAS is an exceedingly rare but life-threatening cause of spontaneous PID. It requires prompt diagnosis and management due to major risks of mortality and reproductive morbidity.
- The pathogenesis of spontaneous PID from GAS is poorly understood. Several prior case reports note a **possible association between recent menstruation as well as oro-genital sexual practices in partners with previous pharyngitis**.[2,5] Both mechanisms are inked in this case.
- A high suspicion for gynaecological pathology is essential in any woman presenting with an undifferentiated acute abdomen. This should include a thorough sexual and reproductive history and physical examination including a pelvic examination.

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References

1. Brunham RC, Gottlieb SL, Paavonen J. Pelvic Inflammatory Disease. *New England Journal of Medicine* 2015; **372**(21): 2039-48.
2. Snyder A, Schmalzle SA. Spontaneous Streptococcus pyogenes pelvic inflammatory disease; Case report and review of the literature. *IDCases* 2020; **20**: e00785.
3. Lusby H, Brooks A, Eden H, Finley A. Uncommon cause of pelvic inflammatory disease leading to toxic shock syndrome. *BMJ Case Reports* 2018; **2018**.
4. Kouijzer IJ, Polderman FN, Bekers EM, Bloks PH, Schneeberger PM, de Jager CP. Initially unrecognised group A streptococcal pelvic inflammatory disease in a postmenopausal woman. *Neth J Med* 2014; **72**(9): 494-6.
5. Gisser JM, Fields MC, Pick N, Moses AE, Srugo I. Invasive Group A Streptococcus Associated With an Intrauterine Device and Oral Sex. *Sexually Transmitted Diseases* 2002; **29**(8): 483-5.