

“STONES WITH CROHN’S”

Nephrolithiasis:

Epidemiology:

- 3.2%-8.6% of patients with IBD; approximately double normal population
- Higher incidence in patients post GI surgery
- Crohn’s > UC
- Men > Women
- Calcium Oxalate
- 30% Uric Acid stones [1]

Pathophysiology:

- Oxalate Stones:
 - normally, oxalic acid combines with calcium in the small bowel to produce an insoluble, nonabsorbable product.
 - in Crohn’s Disease, Ca is bound by the increased free fatty acids that are present due to the diseased bowel.
 - this decrease in free Ca permits oxalates (soluble when alone) to reach the large bowel where the majority of it is absorbed.
- Uric Acid Stones:
 - caused by low urine pH (usually less than 5.5) and low urine volume.
 - the physiological causes are multi-factorial and not fully understood.
 - a cause of the low pH is the high renal H⁺ excretion as it tries to conserve sodium.

Treatment:

- Oxalate:
 - low-fat, low oxalate diet
 - attempts to increase urine volume
 - agents such as calcium to bind oxalate in the gut lumen.
- Uric Acid:
 - no controlled studies
 - increase urine volume and decrease GI loss.
 - use alkalinizing agents like NaBicarb. [2]

Cholelithiasis:

- The proposed mechanism for stone formation is thought to be related to bile deficiency secondary to malabsorption in the ileum.
- This decrease in bile causes the bile salts to become supersaturated with cholesterol.
- Decreased gallbladder motility is thought to also play a role.

Fraquelli M, Losco A, et al. performed an extensive cohort study of 330 cases in Italy and reported:

- Frequency of GB disease higher than normal population (24% vs. 13.8%)
- Age
 - < 44 yrs 13%
 - 44-59 yrs 36%
 - 60 years and up 51%
- Sex
 - Male and female frequencies very similar (M= 23%, F= 25%)
- Site at Diagnosis
 - Ileocecal>Ileal>Colonic
- # of Resections
 - Increasing incidence proportionately [3].

Study by Lapidus et al in Sweden looked at 190 patients with Crohn's disease.

- Prevalence: 26.4%.
- No difference between sexes.
- No difference between age groups.
- BMI not addressed in this study, but shows demographics differ from the normal population.
- Major finding was relationship between number of resections and prevalence.[4]

Should prophylactic cholecystectomy be performed during a resection?

- Chew et al concluded
 - No significant difference in the prevalence of patients requiring surgery.
 - More females than males did require surgery
 - Patients with an ileal resection > 30 cm had higher incidence of surgery
 - Number of resections did not increase need for a cholecystectomy
 - Theoretically more difficult procedure lap if previous resections performed. [5]

References:

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2. Worcester EM. Stones from Bowel Disease. *Endocrinol Metab Clin North Am.* 2002; 31(4): 979-999.
3. Fraquelli M, Alessandra L, Visentin, et al. Gallstones Disease and Related Risk Factors in Patients with Crohn Disease. *Arch Intern Med.* 2001; 161: 2201-2204.
4. Lapidus A, Bangstad M, et al. The prevalence of Gallstone Disease in a Cohort of Patients with Crohn's Disease. *The Am J of Gastroenterology.* 1999; 94: 1261-1266.
5. Chew S et al. Cholecystectomy in Patients with Crohn's Ileitis. *Diseases of the Colon and Rectum.* 2003; 46(11): 1484-1486

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