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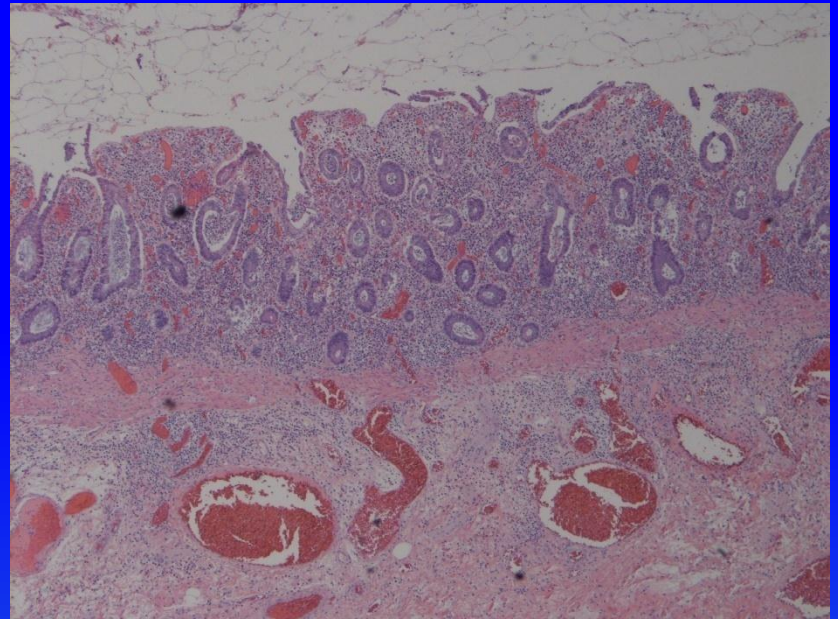
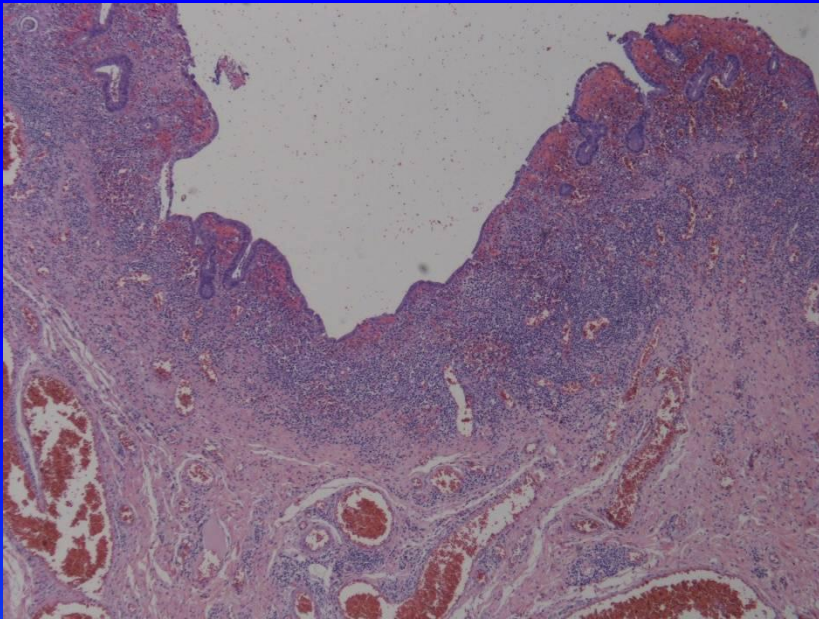
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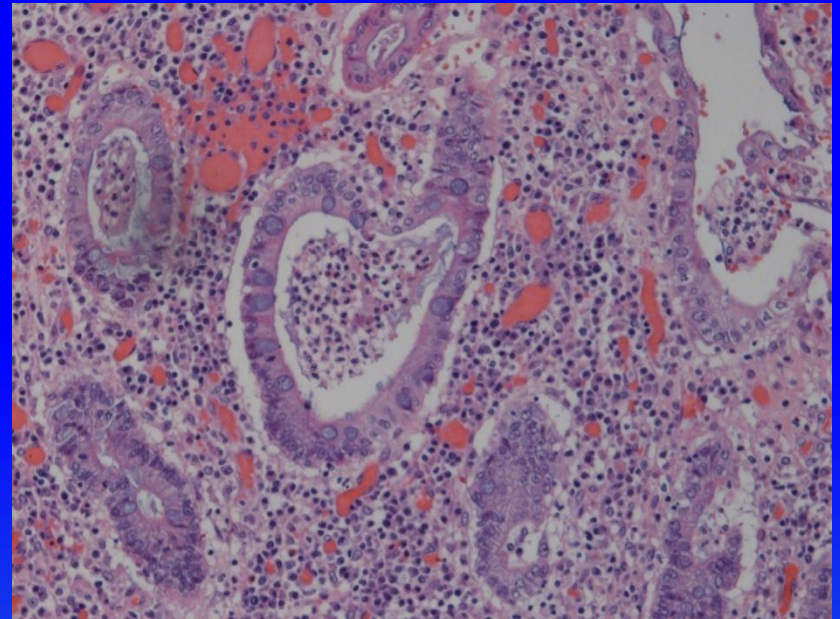
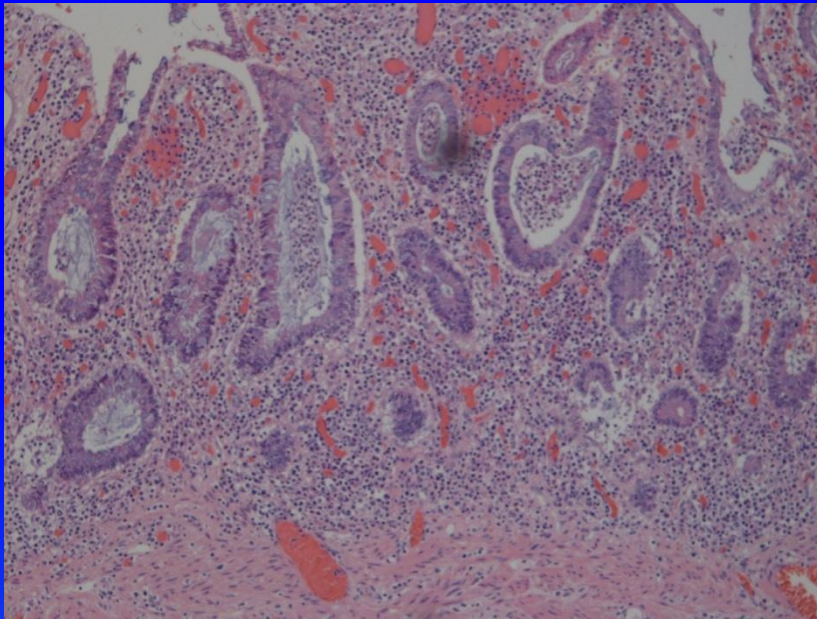
Total colectomy

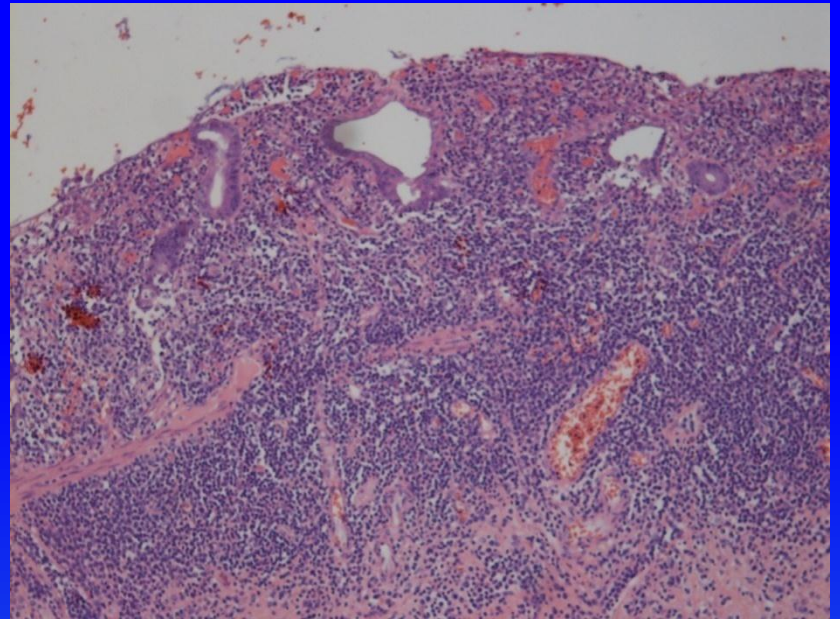
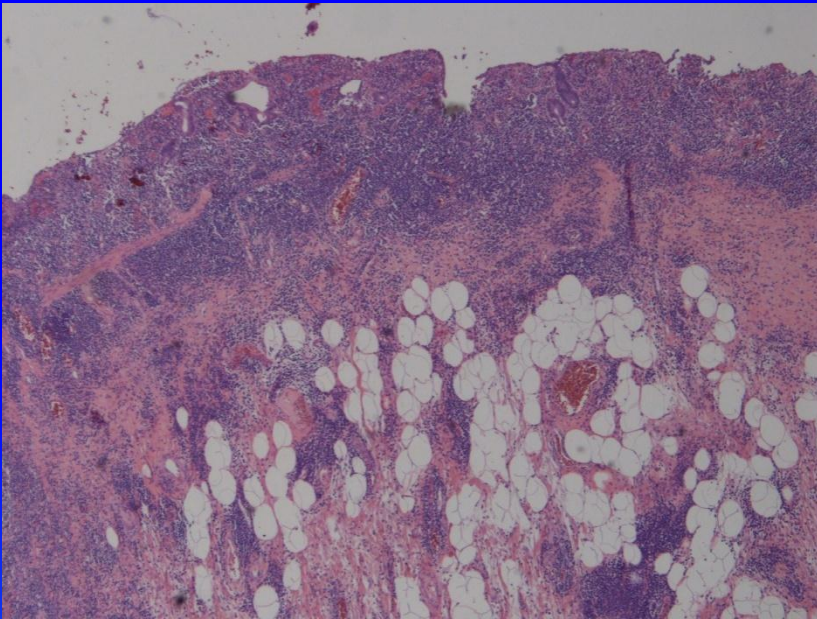


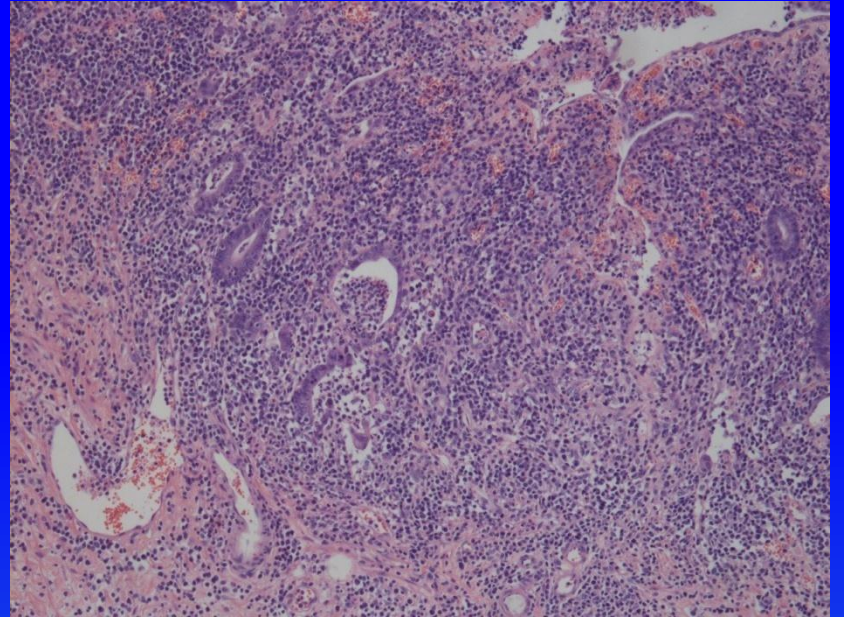
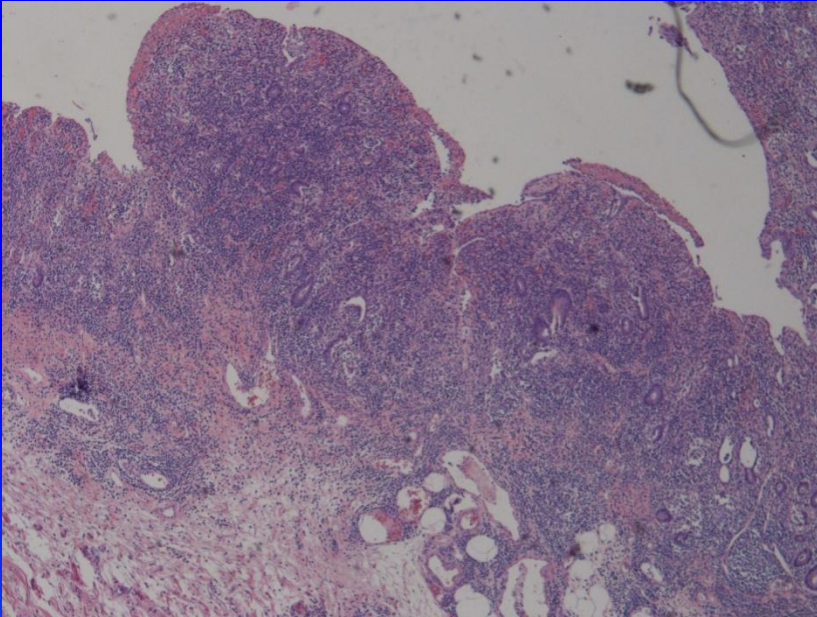


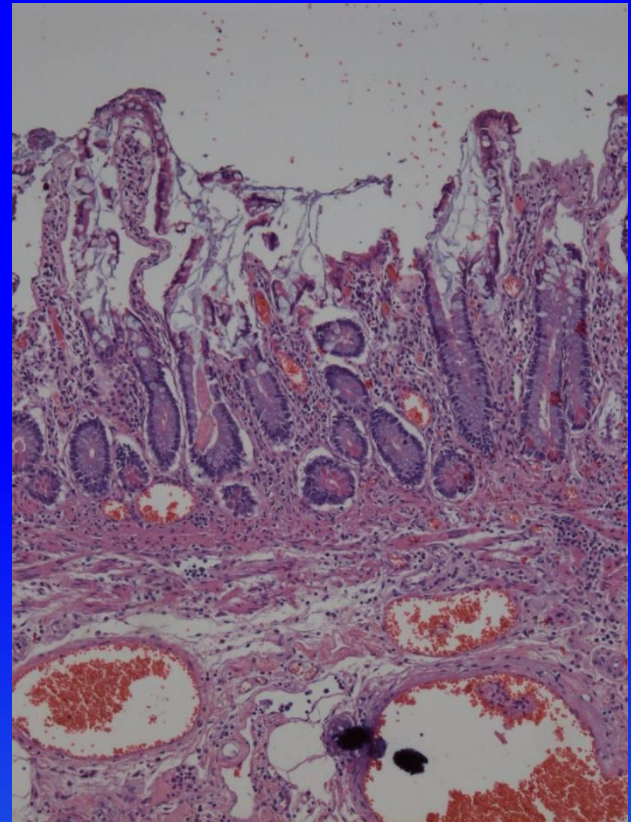
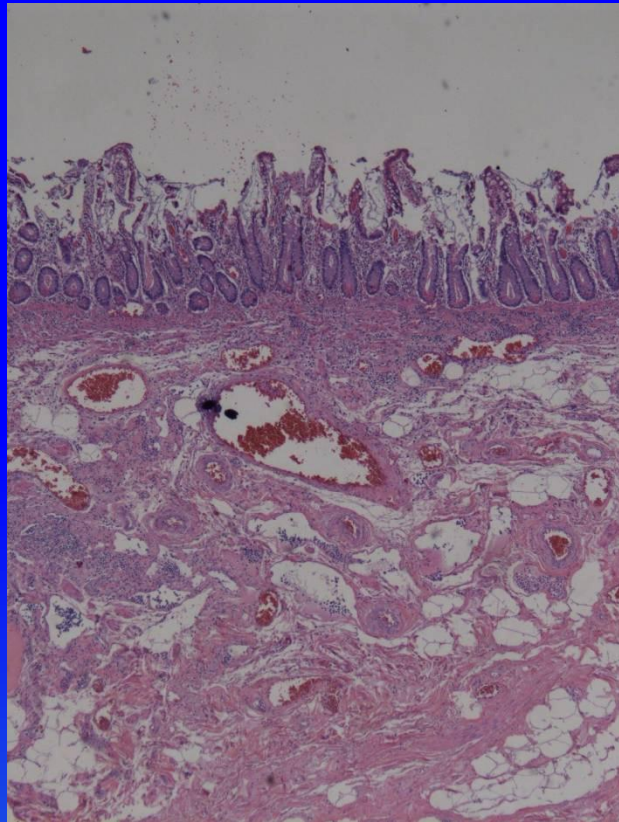


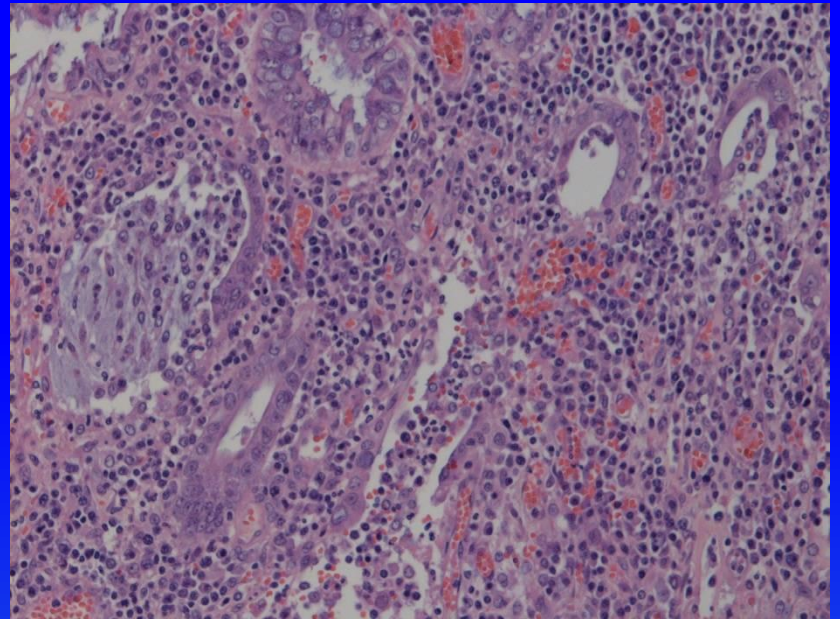
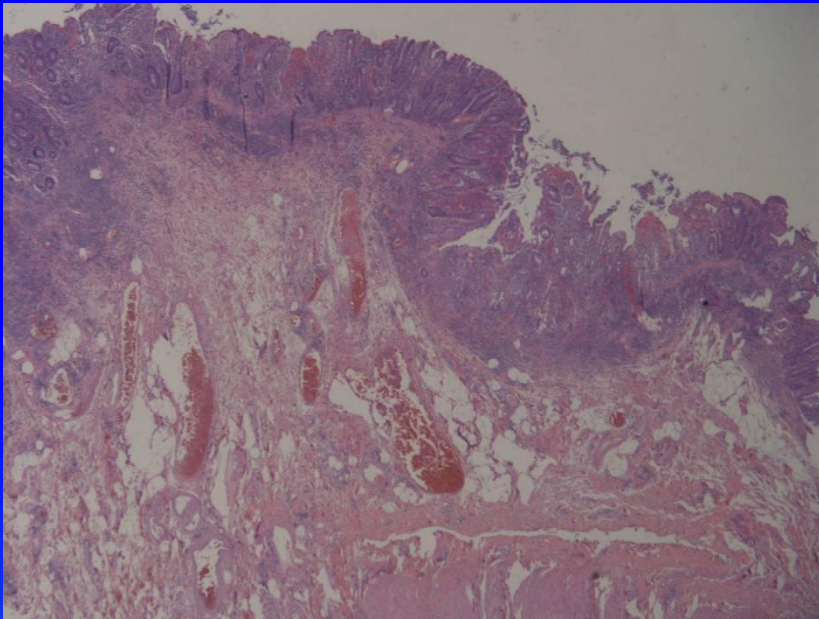












Macroscopic features

- Active stage:
 - Granular and erythematous mucosa
 - Pseudopolyps
 - Shallow ulcers
 - Blood or mucopurulent exudates
- Chronic stage:
 - Flattened, finely granular mucosa
 - Mucosal fibrosis, muscular contraction and shortened colon

Microscopic features

- Active disease:
 - Cryptitis
 - Crypt abscess
 - Ulcer
 - Inflammatory polyp/pseudopolyp
- Chronic disease:
 - Lymphoplasmic cell infiltration in the lamina propria
 - Plasma cell beneath the base of the crypts
 - Distorted crypts: dilated, branched and irregular crypts
 - Paneth cell metaplasia

Clinical manifestations

- Age: early 4th decade
- Gender : F > M
- S/S:
 - Abdominal pain
 - Bloody diarrhea
 - Fecal urgency
 - Fever
 - Weight loss
 - UC flares: periods of remission and relapse



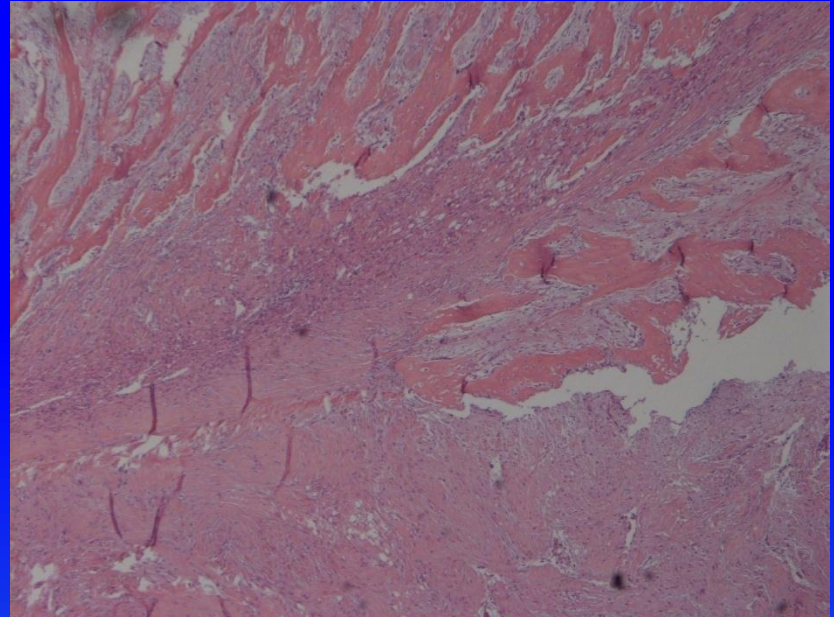
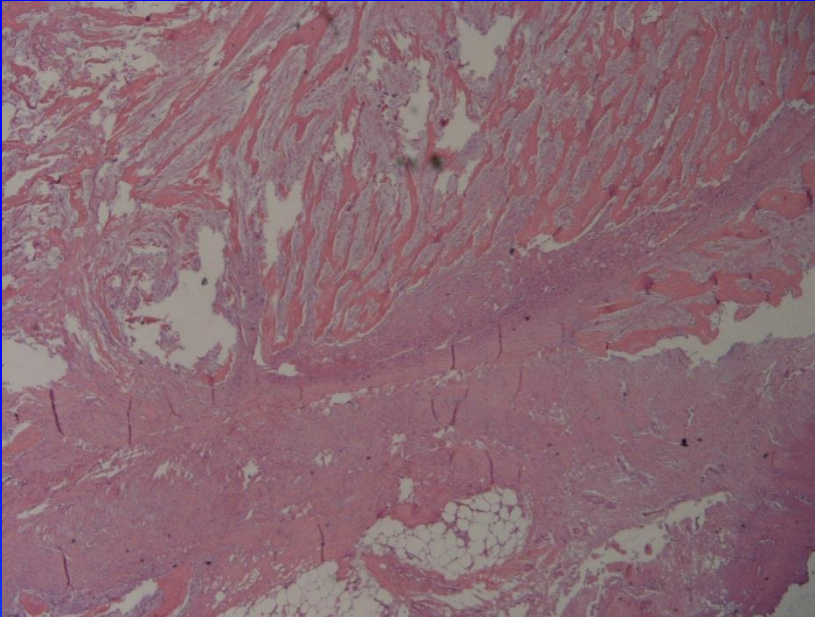
Complications

- Toxic megacolon
 - Colitis associated dysplasia
- 

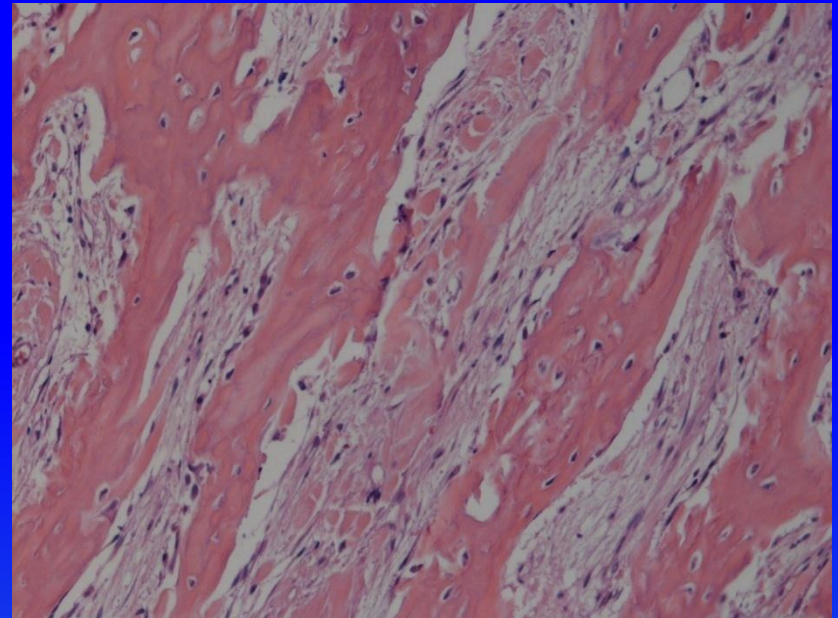
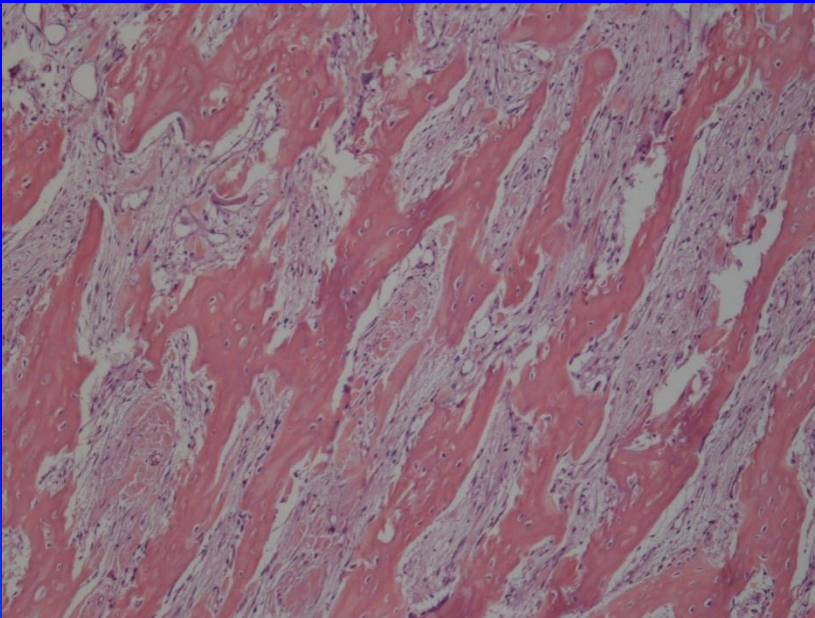


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Mesentery



Diag.: Heterotopic mesenteric ossification



Myositis ossificans

- Def. : A benign fibro-osseous pseudotumor of soft tissue.
- S/S:
 - Rapid onset of pain and swelling
 - Most often involved large sk-m of extremities
 - M:F = 3: 2
 - History of trauma often present
 - Curative by complete resection
 - Recurrence is rare

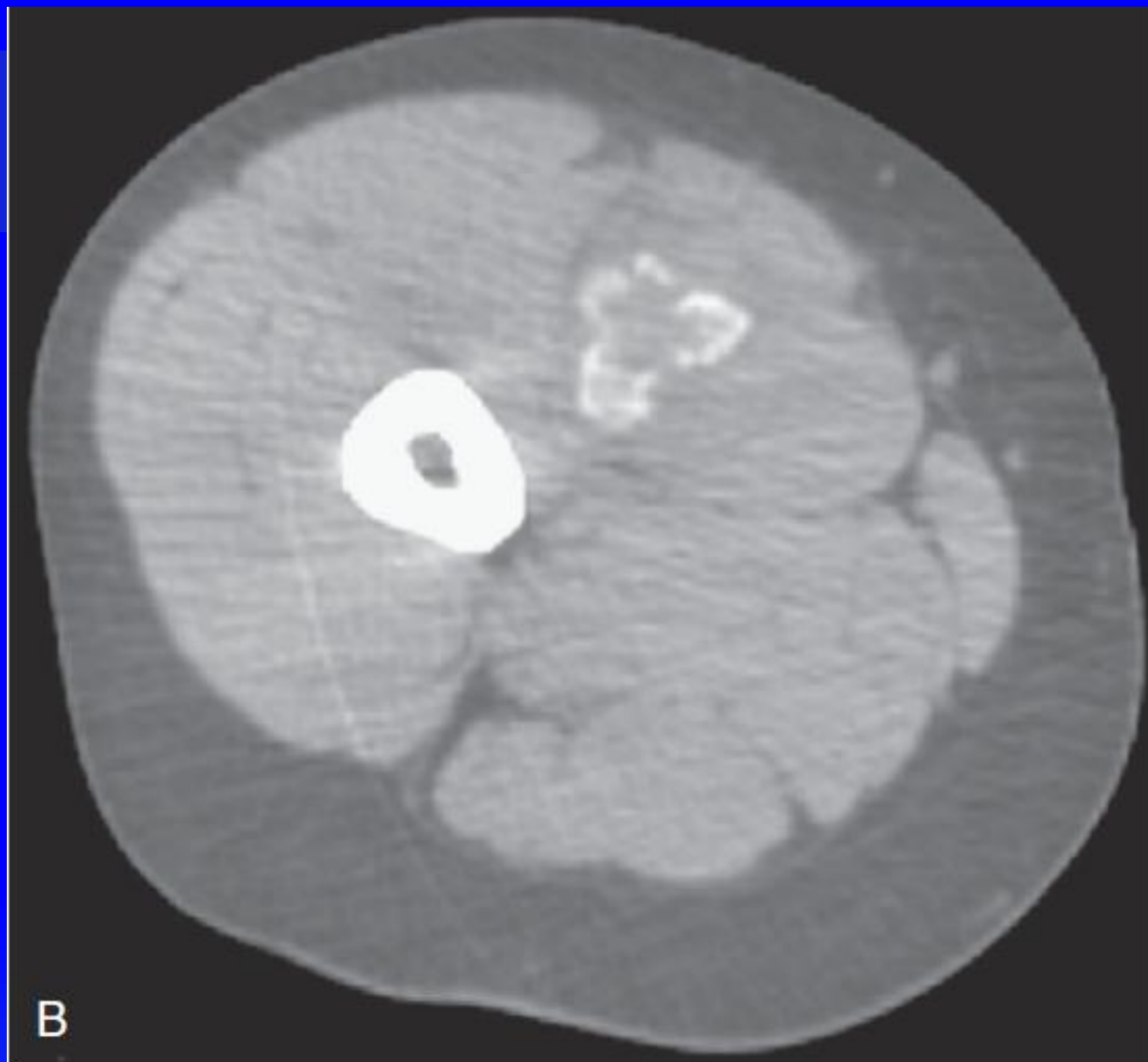


Fig 2. Myositis ossificans involving the thigh. **A**, This lesion (*arrow*) is relatively mature with a well-circumscribed mineralized mass completely detached from the femur. **B**, On cross section, the lesion is peripherally mineralized with a soft tissue center.

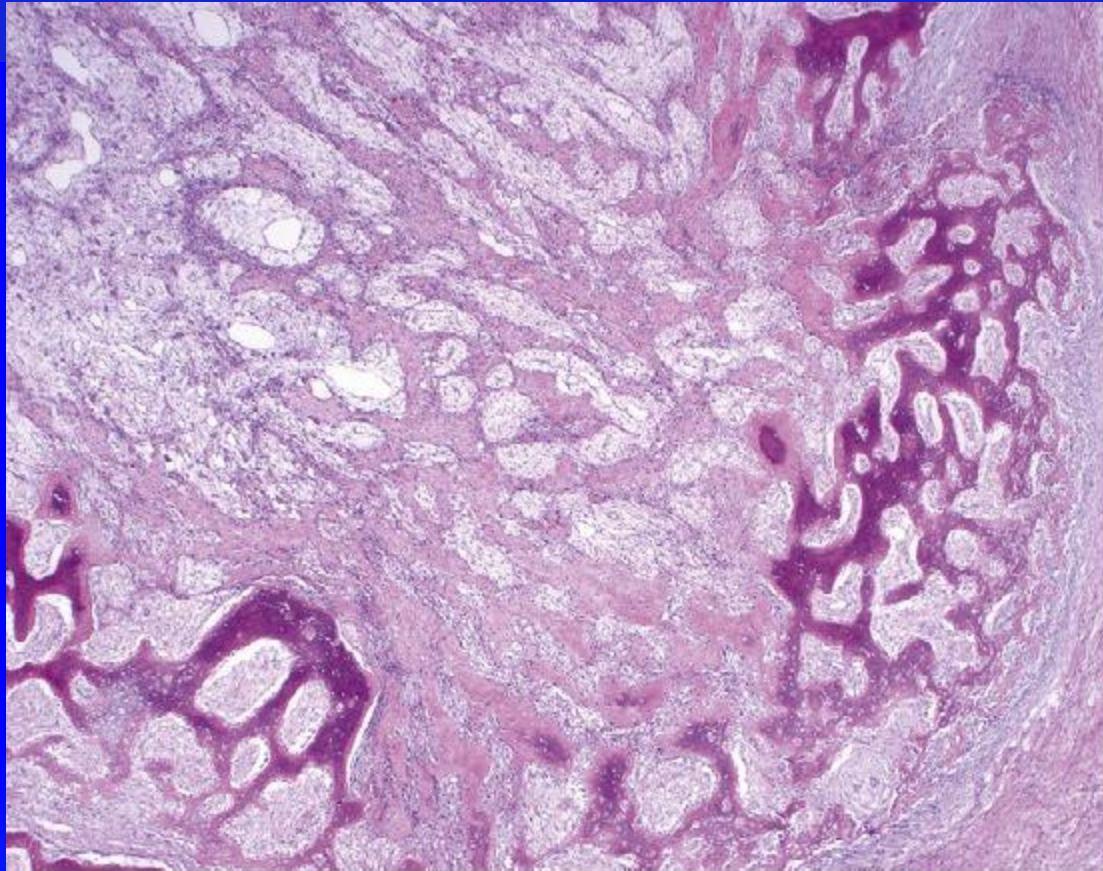
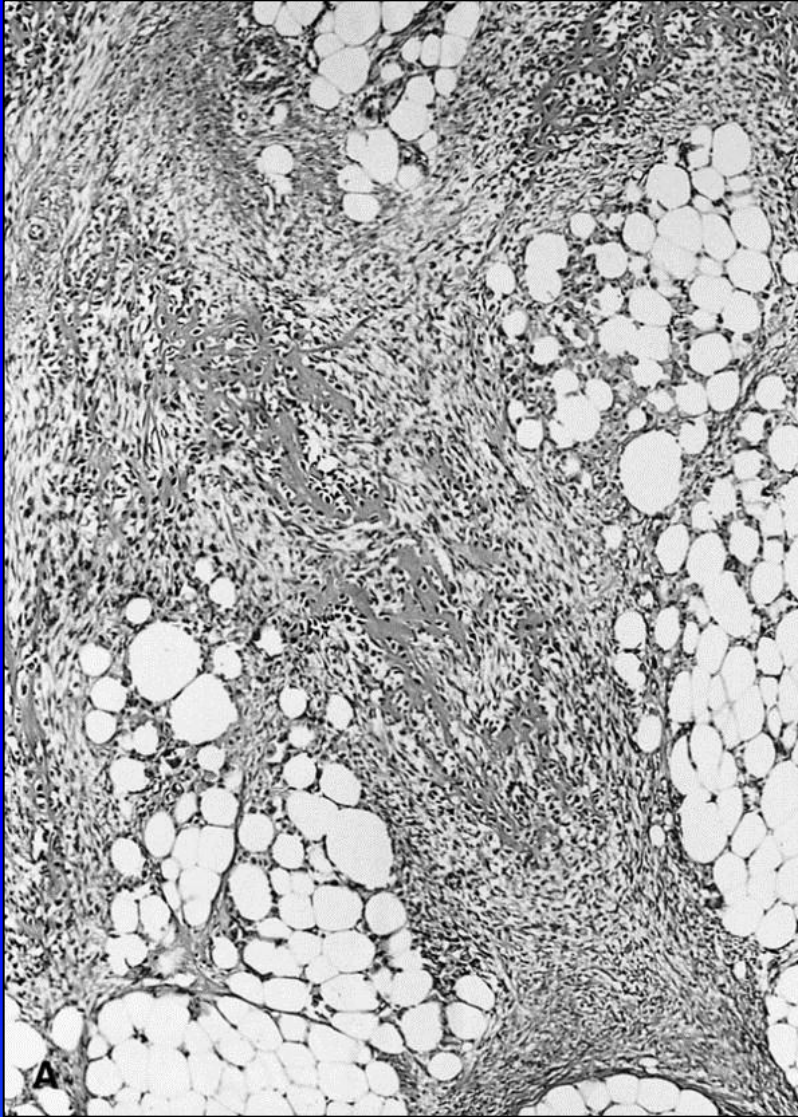


Fig 3. Zonation, demonstrating central looser, fasciitis-like areas (*left*) and peripheral calcified bone (*bottom and right*), is characteristic of myositis ossificans.

Heterotopic mesenteric ossification

- Def.: Intraabdominal ossifying pseudotumor principally involving the mesentery
- Synonym:
 - Mesenteritis ossificans
 - Intraabdominal myositis ossificans

FIG. 2.



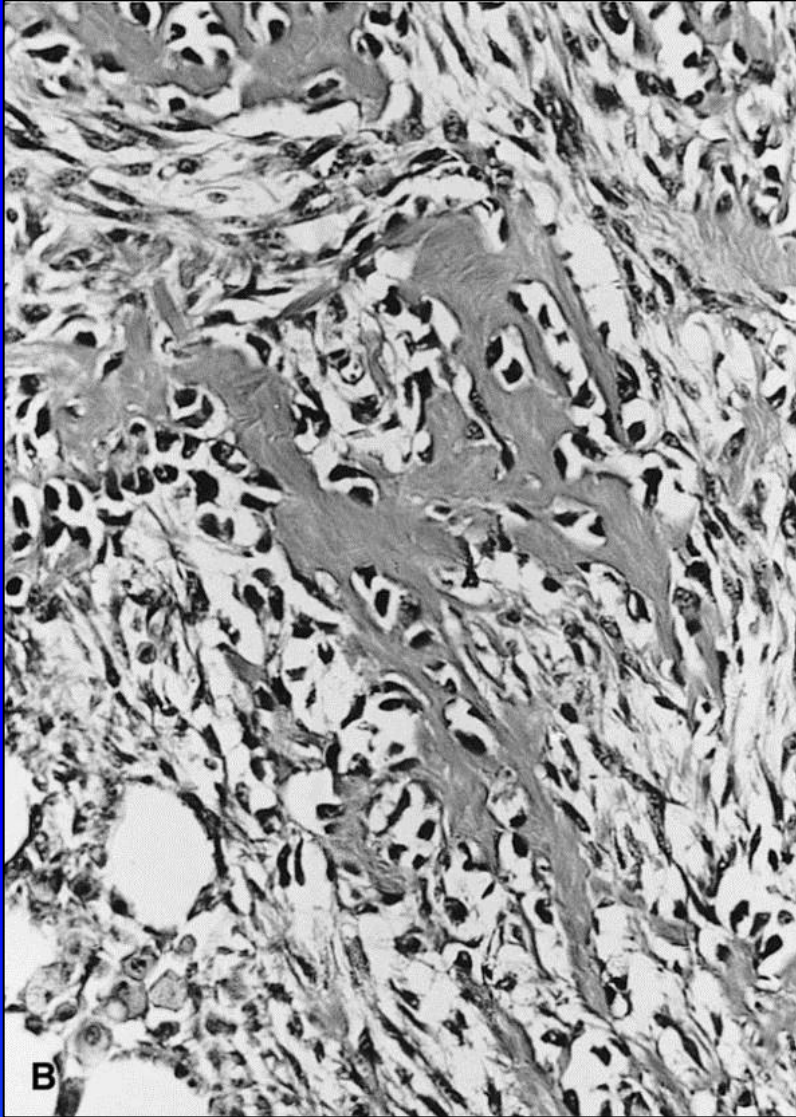
Heterotopic Mesenteric Ossification ('Intraabdominal Myositis Ossificans'): Report of Five Cases.

Wilson, Jon; Montague, Christopher; Salcuni, Pierfranco; Bordi, Cesare; Rosai, Juan

American Journal of Surgical Pathology. 23(12):1464, December 1999.

FIG. 2. Case 1. (A) Widened and hypercellular mesenteric fibrous septa with centrally located foci of newly formed osteoid. (B) On high power, the osteoid trabeculae are lined by prominent osteoblasts.

Figure 2



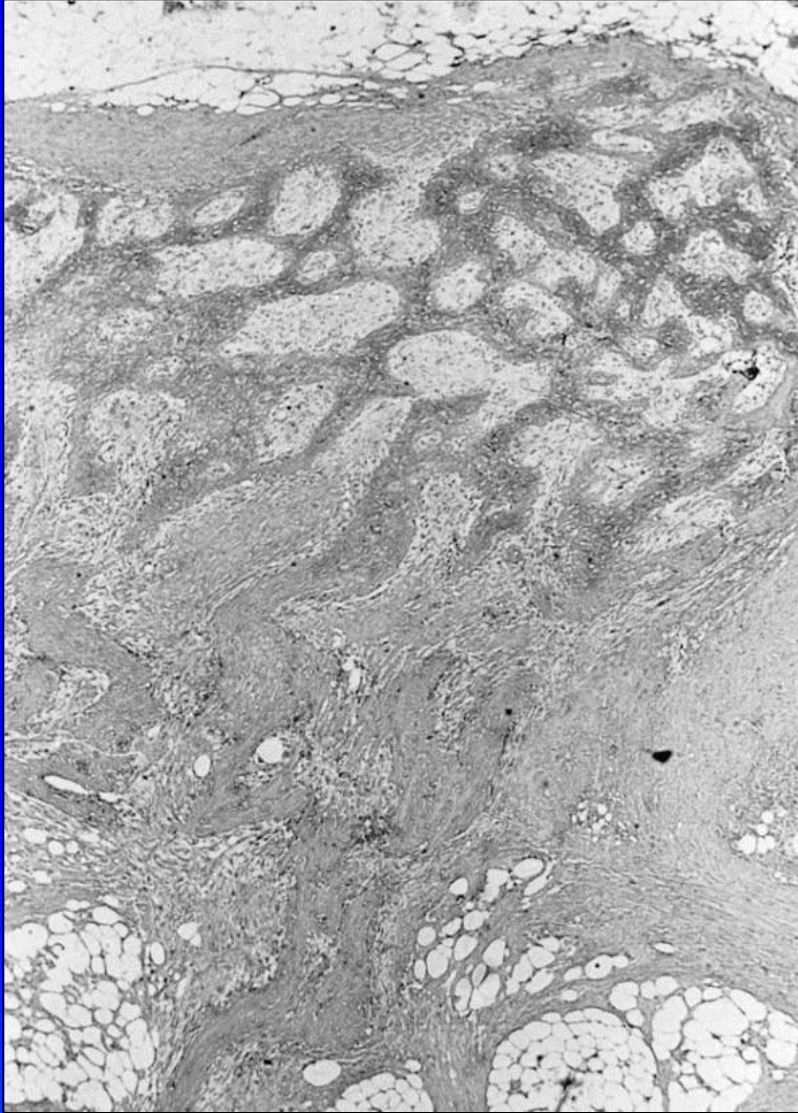
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Figure 2 . Continued

FIG. 3.



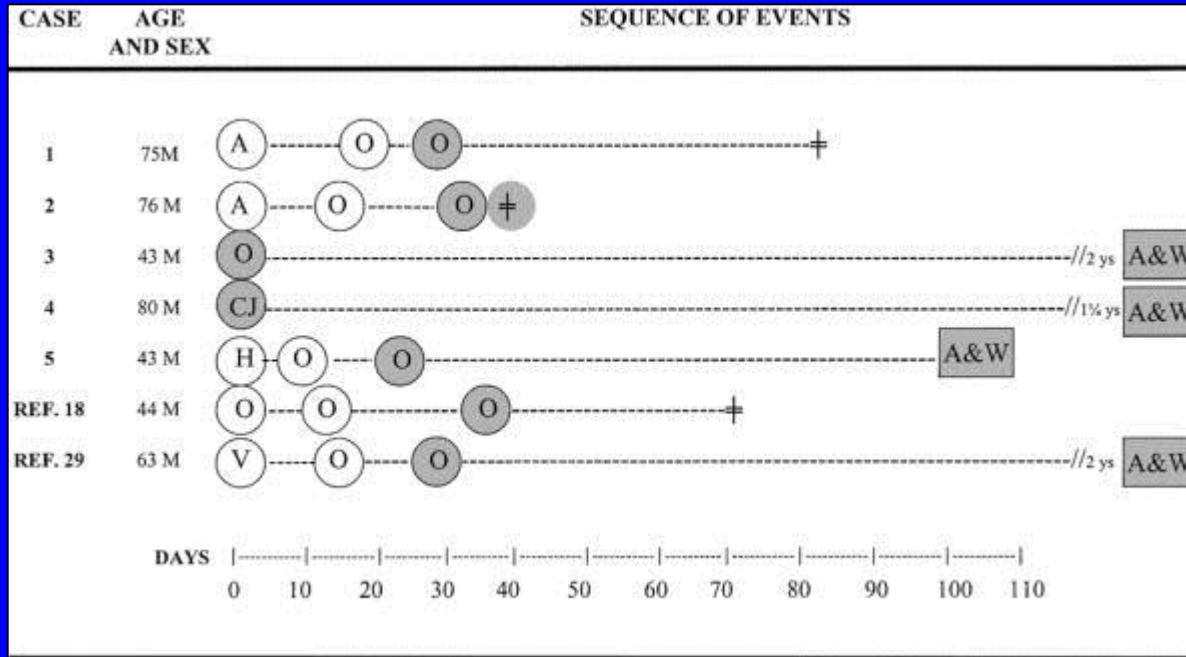
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FIG. 3. Case 2. The maturation wave of the heterotopic bone formation results in the so-called zone phenomena.

FIG. 1.



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FIG. 1. Schematic representation of sequence of events in cases of heterotopic ossification. A, abdominal aortic aneurysm; CJ, choledoco-jejunal anastomosis; H, umbilical hernia; O, small bowel obstruction; V, vascular claudication; ?, reason for operation unknown. Symbols: Open circle, operation; double dagger, death; A&W, alive and well; gray circle, heterotopic ossification.

Heterotopic Mesenteric Ossification After Total Colectomy for Bleeding Diverticulosis of the Colon—A Rare Case Report

Huang-Jen Lai,¹ Shu-Wen Jao,¹ Tsai-Yu Lee,¹ Jing-Jim Ou,¹ Jung-Cheng Kang^{1,2*}

Heterotopic bone formation within an abdominal incision is a rare sequela of abdominal surgery. Only a few previous reports have noted heterotopic ossification in the mesentery of the small intestine and peri-ileostomy. Here, we report the case of a 60-year-old man who underwent emergent laparotomy and total colectomy with end ileostomy and developed this condition 1 month postoperatively. Heterotopic ossification in the peri-ileostomy tissue caused stenosis of the ileostoma. Laparotomy for re-anastomosis due to a large bone formation at an abdominal midline scar is very difficult and results in a massive abdominal wall defect. Therefore, we used a lower transverse incision to avoid the site of bone formation and resected the terminal ileum with its ossified mesentery. Then, we successfully carried out an anastomosis between the ileum and the rectum. The possible pathogenesis is a metaplastic mechanism of differentiation of immature multipotent mesenchymal cells. Our case provides the experience of treatment and new perspective on currently held hypotheses of heterotopic bone formation. [*J Formos Med Assoc* 2007;106(2 Suppl):S32–S36]

Key Words: ectopic bone formation, heterotopic ossification, intra-abdominal, mesenteric ossification, myositis ossificans

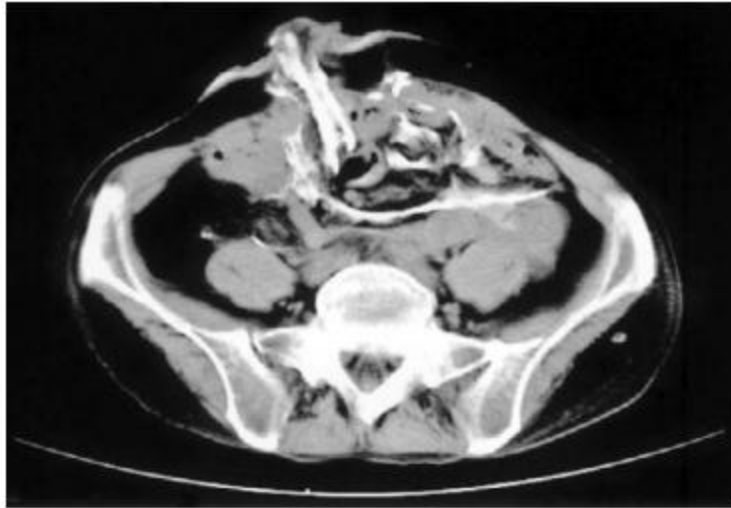


Figure 3. Noncontrast computed tomography demonstrates extensive heterotopic ossification in the abdominal midline incision, mesentery of small intestine, and perileostomy tissue.

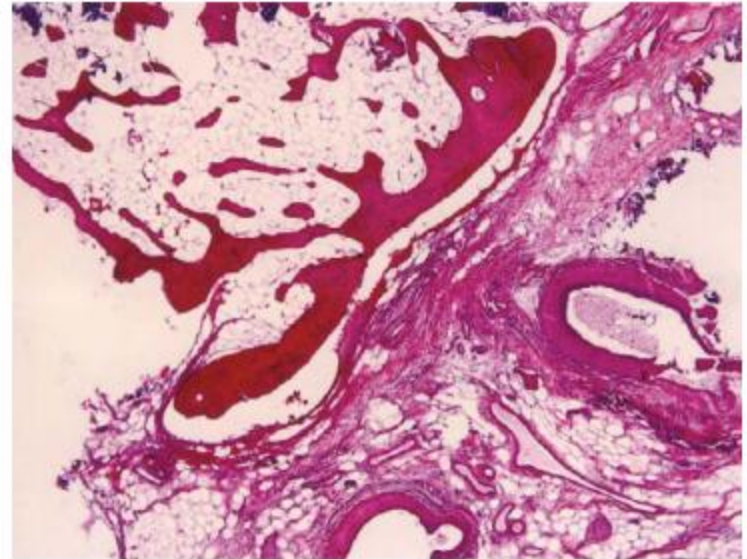
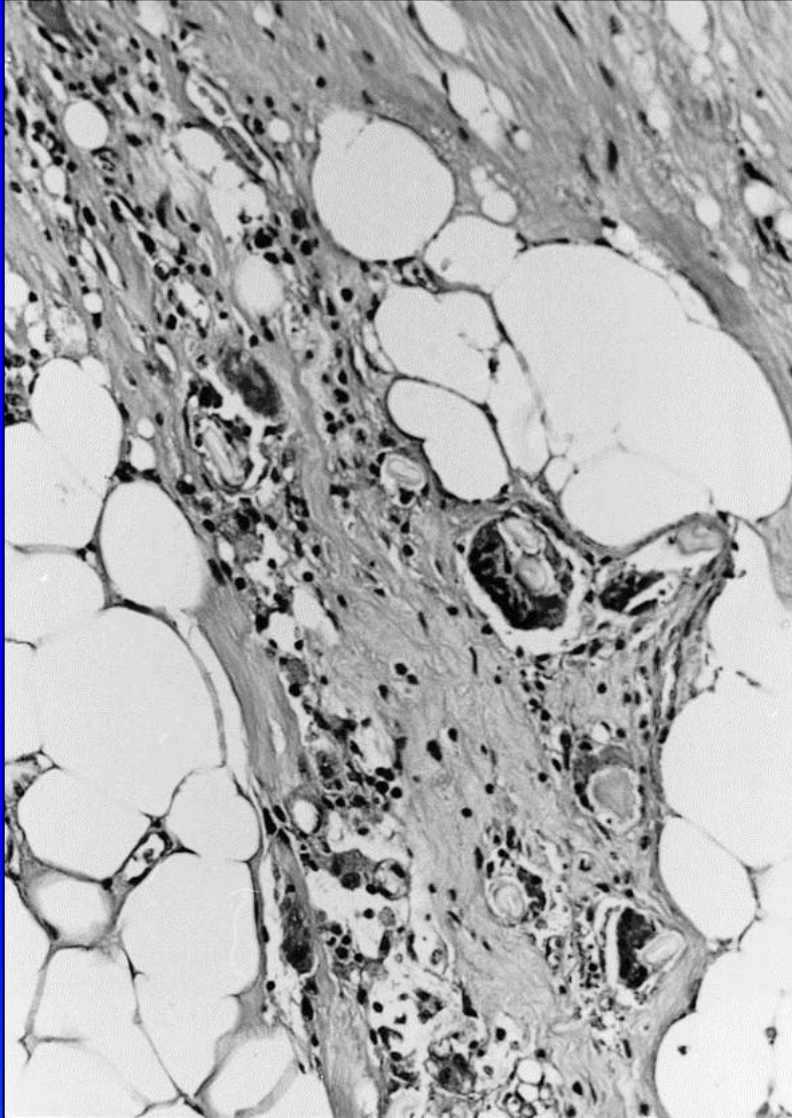


Figure 5. Microscopically, a fragment of lamellar trabecular bone is seen within the mesenteric tissue (hematoxylin & eosin, 40 \times).

Table. Summary of case reports of heterotopic mesenteric ossification in the literature

Authors	Date	Case(s)	Sex	Age	Previous abdominal surgeries
Hansen et al ⁸	1983	1	M	55	Coloproctectomy for ulcerative colitis
Lemeshev et al ⁹	1983	1	M	44	Laparotomy for small bowel obstruction
Myers & Minton ¹⁰	1989	1	M	57	Right hemicolectomy for adenocarcinoma
Yannopoulos et al ¹¹	1992	1	M	63	Aortic bifemoral bypass for claudication
Wilson et al ¹²	1999	5 (no. 1)	M	75	Repair of an abdominal aortic aneurysm
		(no. 2)	M	76	Left hemicolectomy for adenocarcinoma and repair of an abdominal aortic aneurysm
		(no. 3)	M	43	None
		(no. 4)	M	80	None
		(no. 5)	M	43	Laparotomy for incarcerated umbilical hernia
Marucci et al ¹³	2000	1	M	25	Laparotomy for a gunshot injury
Hakim & McCarthy ¹⁴	2001	1	M	50	Left nephrectomy and Hartmann procedure (left colon resection) for stab wound
Comperat et al ¹⁵	2004	2	*	*	Laparotomy
Bovo et al ¹⁶	2004	1	M	76	None
Tonino et al ¹⁷	2005	1	M	39	1. Laparotomy for gunshot injury 2. Laparotomy for enterocutaneous fistulae
Androulaki et al ¹⁸	2005	1	M	74	1. Reconstruction of an umbilical hernia and cholecystectomy 2. Prostatectomy
Lai et al (this case)	2007	1	M	60	Total colectomy for lower gastrointestinal bleeding

FIG. 4.



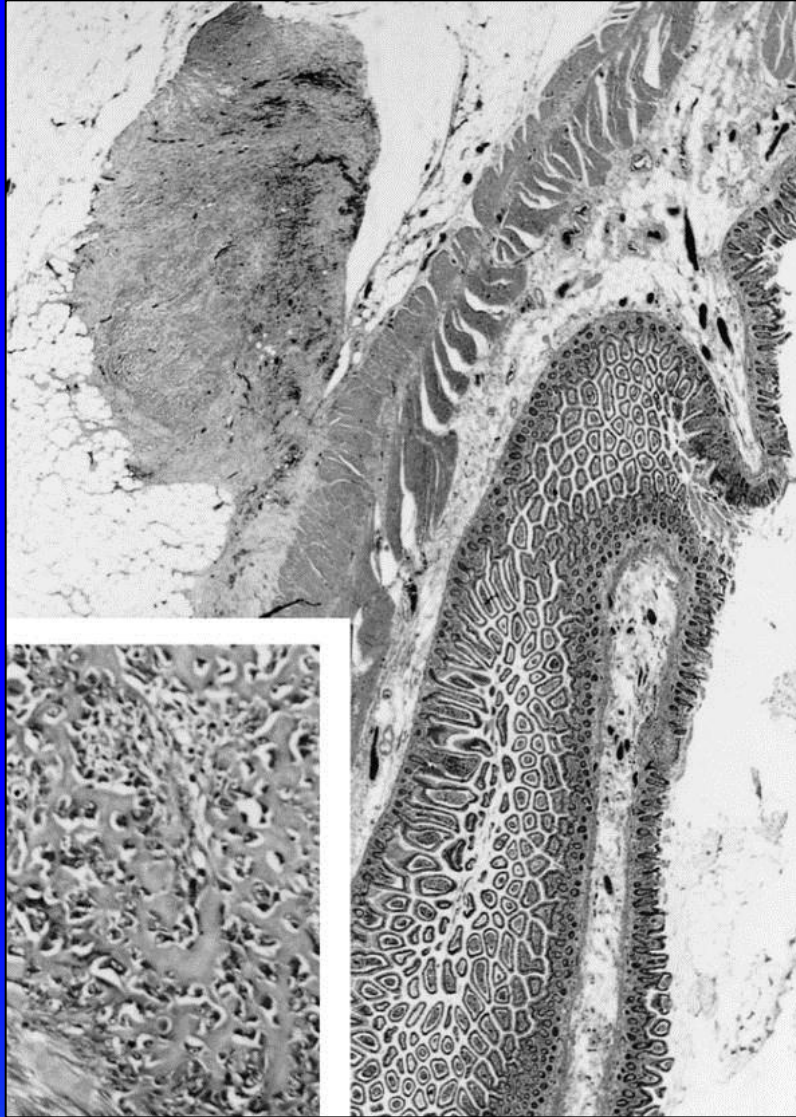
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Juan

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23(12):1464, December 1999.

FIG. 4. Case 2. This inflamed and thickened mesenteric septum features multinucleated giant cells containing birefringent foreign body material in their cytoplasm.

FIG. 5.



**Heterotopic Mesenteric
Ossification ('Intraabdominal
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FIG. 5. Case 4. Well-
circumscribed nodule
attached to the small bowel
serosa. The inset makes
apparent the heterotopic
ossification within the
nodule.

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