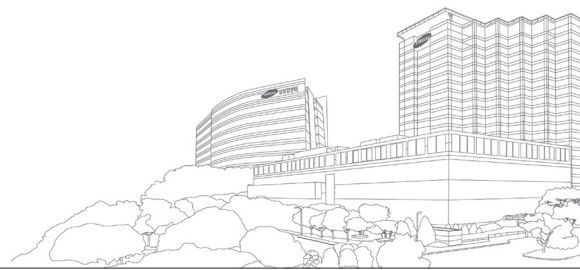


장염 완전정복 : 감염성 장염

김 태 준

성균관대학교 의과대학 삼성서울병원 소화기내과



SAMSUNG SAMSUNG
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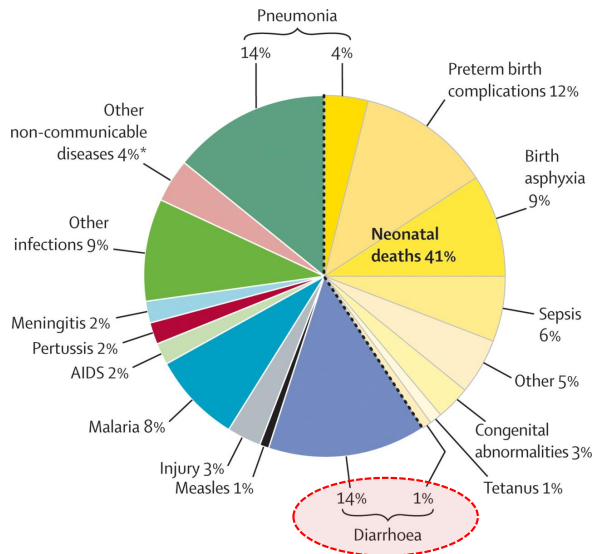
감염성 장염

김태준

삼성서울병원 소화기내과



5세 미만 소아의 사망원인



2

Lancet 2008

선진국에서의 감염성 설사

- 응급실 내원 환자의 5%, 입원 환자의 1.5%를 차지
- 1년에 1인당 약 1.4회 정도 경험
- 소아 신부전의 가장 흔한 원인: 장출혈성 대장균 감염 (STEC/EHEC, O157:H7)



3

감염성 설사의 주 원인균

| Pathogen | % Infectious diarrhea |
|----------------------------|-----------------------|
| <i>S. aureus</i> | 6.1 |
| <i>E. coli</i> | 23.5 |
| <i>Shigella spp.</i> | 1.0 |
| <i>Salmonella spp.</i> | 4.0 |
| <i>C. perfringens</i> | 5.5 |
| <i>V. parahaemolyticus</i> | 4.4 |
| <i>C. jejuni</i> | 1.0 |
| <i>B. cereus</i> | 2.9 |
| Norovirus | 28.8 |
| Others | 23.7 |

4

Korea Centers for Disease Control and Prevention 2009

사람의 방어 인자

- 위산: first-line defense system, pH < 4.0 (bactericidal)
- PPI 사용: 감염성 장염 위험 증가

| Enteric infection | Relative risk by PPI use |
|----------------------|--------------------------|
| <i>Salmonella</i> | 4.2-8.3 |
| <i>Campylobacter</i> | 3.5-11.7 |
| <i>C. difficile</i> | 1.2-5.0 |

5

C. Bavishi and H. L. DuPont. AP&T 2011

사람의 방어 인자

■ 장내 정상 세균총

- Powerful resistance to colonization
- Clinical responses of recurrent *C. difficile* infection to fecal microbiota transplant (FMT) therapy



6

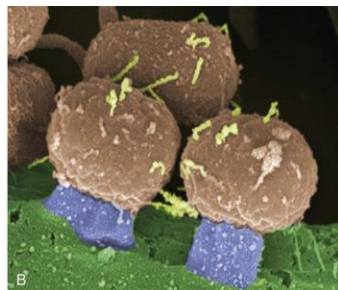
세균의 공격 인자

■ Adherence factors

- colonization

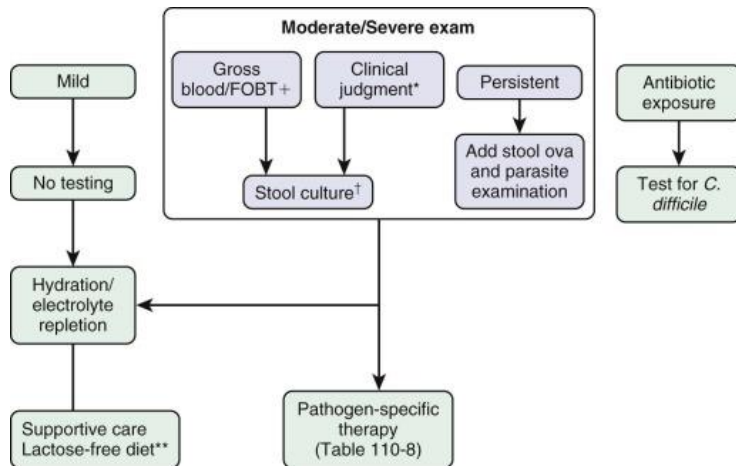
■ Toxins

- Enterotoxins of ETEC
- Cytotoxins of *C. difficile* toxins
- Shiga toxins of *Shigella dysenteriae* and *E. coli*



7

진단 및 치료의 알고리즘



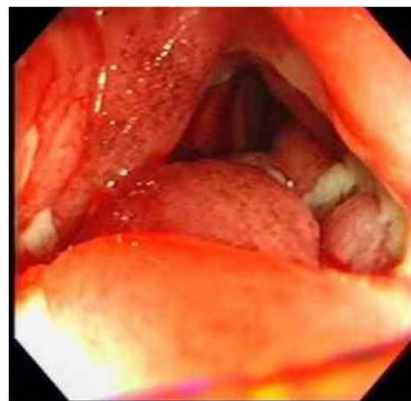
8

Slisenger and Fordtran's Gastrointestinal and Liver Disease (10th ed)

감염성 장염 – 내시경 소견



Shigella
UC-like

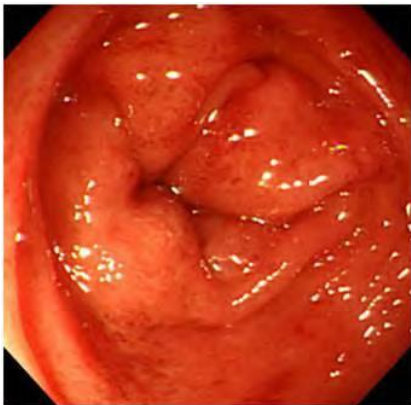


Yersinia
CD-like

9

감염성 장염 – 내시경 소견

Salmonellosis



UC-like



CD-like

10

감염성 장염과 염증성 장질환의 감별

| Infectious diarrhea | IBD |
|-------------------------------|--|
| Clinical presentation | |
| Present early (within 1 week) | Present later (>1 week after symptoms onset) |
| Fever | Less fever, prior abdominal symptoms |
| Histopathology | |
| Edema | Surface erosion |
| Neutrophils of lamina propria | Basal lymphoplasmacytosis |
| Superficial cryptitis | Architectural crypt distortion |

11

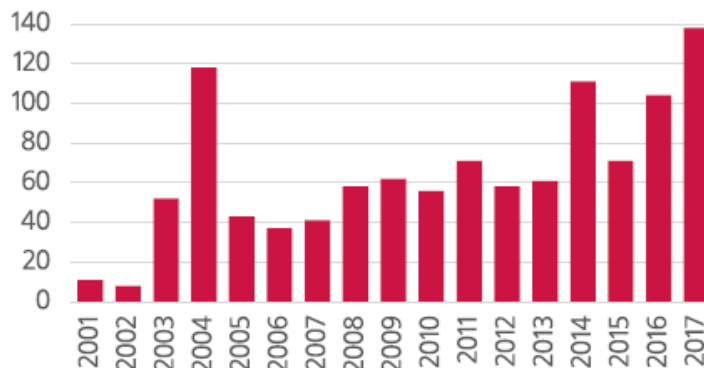
장출혈성 대장균 STEC/EHEC의 전파

- Shiga-toxin ECI면서 장병원성 대장균의 특성 (attaching and effacing) 을 같이 갖고 있어 병독성이 강하고 대규모 유행을 잘 일으킴
- 가장 흔한 혈청형은 O157:H7
- 병원소: 소나 다른 큰 초식 동물의 장
- 전파경로
 - 완전히 익히지 않은 갈린 소고기
 - 완전히 익히지 않은 채소
 - 기타 물, 동물과 직접 접촉하는 동물원, 사람간 전파를 통해서도 전파됨
- 전파가 쉽게 일어나게 하는 특성
 - 실온에서 장기간 생존/증식 가능
 - 적은 양(~100마리)을 섭취해도 감염 가능

12

역학

국내 장출혈성 대장균 감염증 발생 현황(질병관리본부)



- 연중 발생하며 특히 6-8월에 많음
- 미국: 연간 약 26만명의 STEC 감염 환자가 발생하여 30명 정도가 사망할 것으로 추산됨.

13

임상 양상

- 잠복기: 2-10일 (평균 3-4일)
- 증상
 - 심한 경련성 복통
 - 수양성, 혈성 설사
 - 발열이 없는 경우가 흔함
- 용혈성 요독 증후군 (HUS)
 - 시가(shiga) 독소가 혈류를 타고 혈관 내피세포를 침범하여 발생
 - 전체환자의 약 10%에서 발생
 - 5세 미만 소아와 노인에서 흔함
 - 분열적혈구증가증(schistocytosis), 빈혈, 혈소판감소증

14

진단

- 임상적 의심이 중요
- 발열이 없는 경우가 흔해서 장중첩증이나 허혈성 대장염 등으로 오인되기 쉬움
- 혈성 설사가 있는 모든 환자에서 반드시 의심하여야 하고, 경련성 복통을 동반한 설사에서도 감별진단으로 고려해야함

15

치료

보존적 치료

항생제는 금기

소아에서 용혈성 요독 증후군의 위험을
높이는 것으로 알려짐

항생제가 시가 독소의 합성 및 배출을 증가시킴

투여해도 악영향이 없는 항생제가 있는지는
아직 불분명함

16

장염 완전정복 : 비감염성 장염

홍 성 노

성균관대학교 의과대학 삼성서울병원 소화기내과



장염 완전 정복 : 비감염성 장염 Non-IBD and noninfectious colitis

Sung Noh Hong, M.D., Ph.D.

*Department of Medicine, Samsung Medical Center,
Sungkyunkwan University School of Medicine*

SAMSUNG 삼성서울병원

장염 Inflammatory Bowel Diseases

• Idiopathic

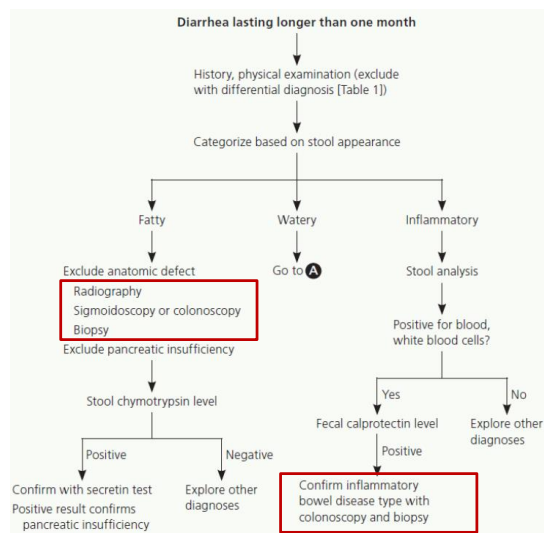
- Ulcerative Colitis (UC)
- Crohn's Disease (CD)
- Indeterminate Colitis

Non-IBD and
noninfectious colitis

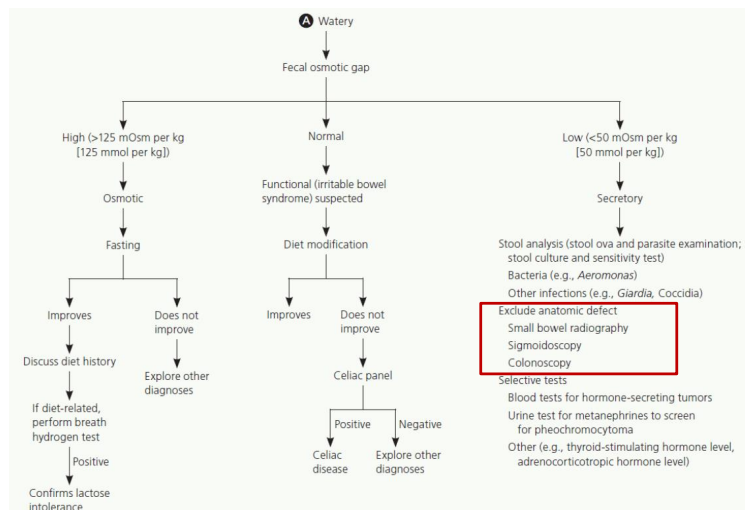
• Inflammatory Diseases of Colon other than Idiopathic IBD

- Infectious Enterocolitis
- Ischemic Colitis
- Diverticulitis
- Drug-Induced Colitis
 - Antibiotics
 - NSAID
- Intestinal Behcet's Disease
- Vasculitis
- Radiation procto-colitis
- GVHD
- Microscopic colitis

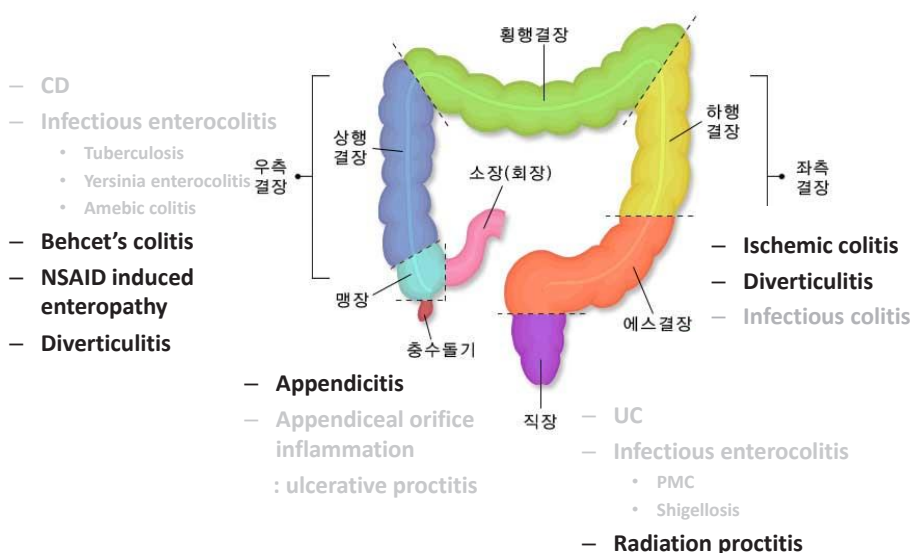
Differential diagnosis with chronic diarrhea



Differential diagnosis with chronic diarrhea



Observation Point for DDx: Location of lesions



Observation Point for Differential Diagnosis

Description

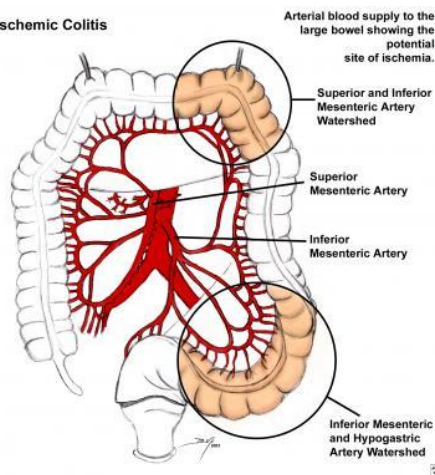
- Location of lesions
- Continuity of lesions
- Features of ulcers
 - Morphology & Direction
 - Mucosal change adjacent to ulcers
- Inflammatory sequelae
 - Scar (pseudopolyps, pseudo-diverticulum, & patulous ICV)
 - Stricture
 - Fistula

Character

- Hyperemia
- Edema
- Granularity
- Mucosal friability
- Erosion
- Aphthous ulcer
- Ulcer
- Inflammatory sequelae

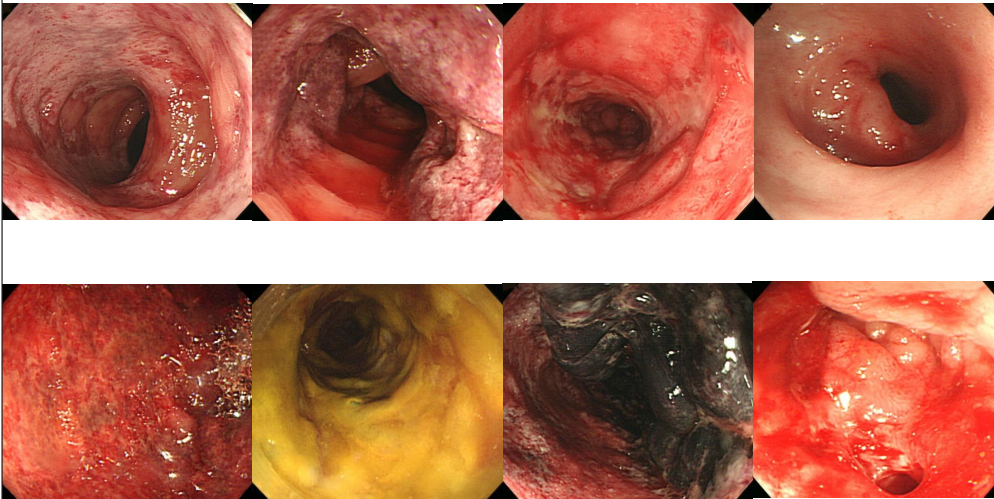
Ischemic colitis

Ischemic Colitis



- Typical symptom: sudden onset hematochezia and cramping natured LLQ pain
 - Other manifestations : fever, necrosis, perforation, peritonitis, septic shock.
 - Endoscopic findings
 - Edematous and friable mucosa, segmental erythema, scattered erosions, longitudinal ulcerations, petechial hemorrhages, and purple hemorrhagic nodules
- segmental disease
 - rectal sparing
 - rapid spontaneous resolution

Endoscopic findings of ischemic colitis



Endoscopic Diagnosis of Intestinal Behcet's disease

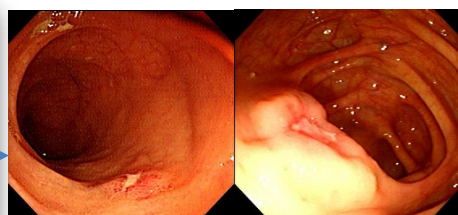
Table 5. Endoscopic Findings of Intestinal Behcet's Disease

Typical findings

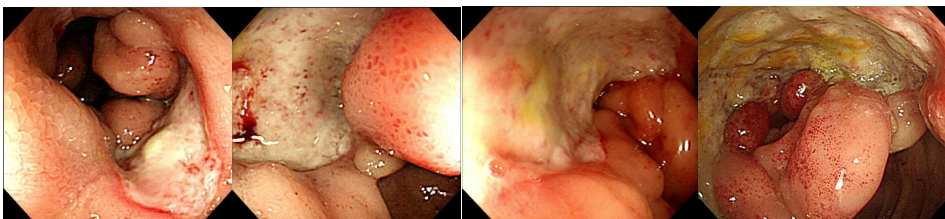
1. Single or a few large ulcer in ileo-cecal area
2. Round or oval shape deep ulceration
3. Discrete and elevated margin
4. Ulcer base covered with exudates

Atypical findings

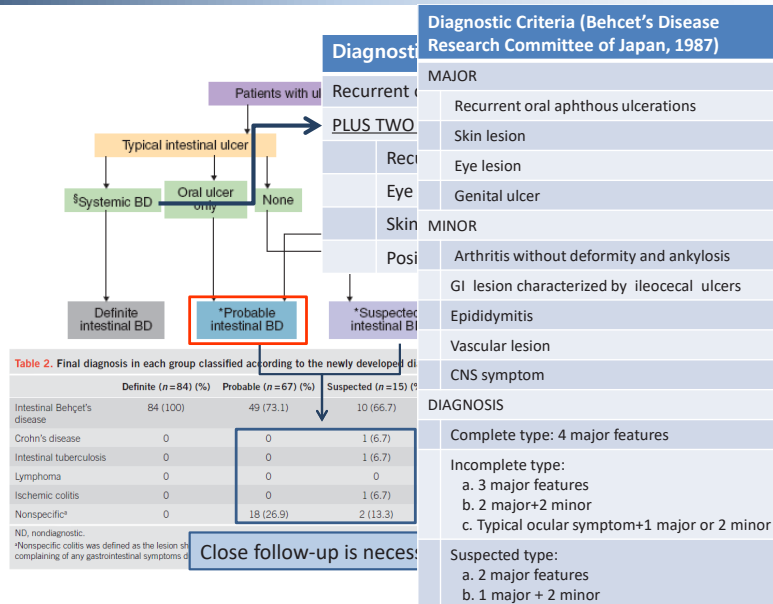
1. Aphthoid or geographic ulcers
2. Multi-segmental or diffuse distribution



베체트 장염 진단 가이드라인, 대한소화기학회지 2009



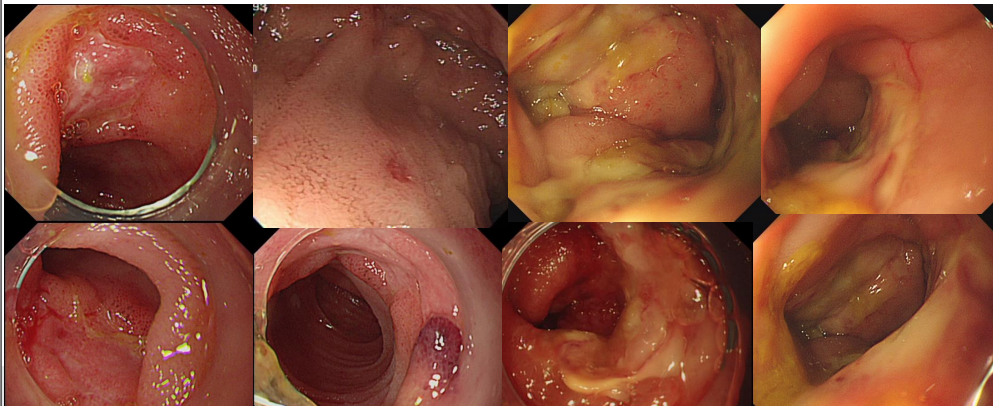
Diagnosis of Intestinal Behcet's disease



Cheon et al. AJG 2009

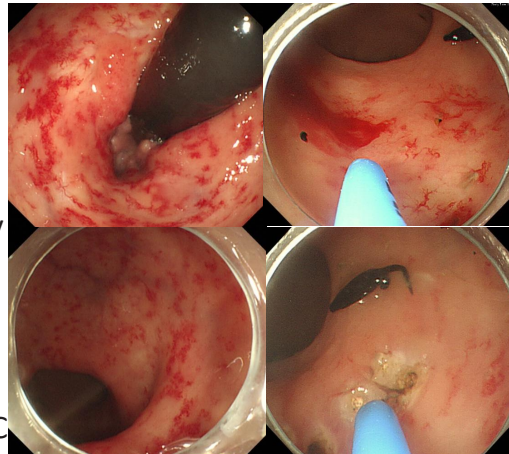
NSAID induced enteropathy

- Approximately 10-12% of newly diagnosed colitis may be related to NSAID administration
- Clinical symptoms
 - IDA ~ obstruction, massive bleeding, perforation
 - Endoscopic finding of NSAID : Nonspecific



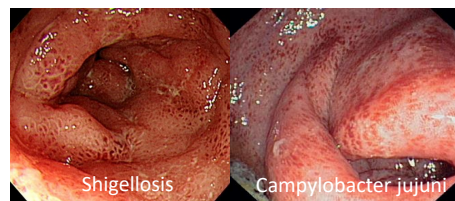
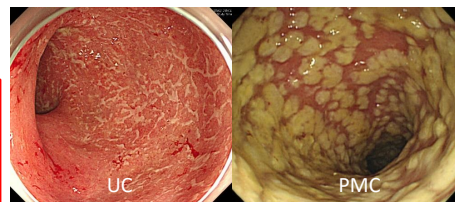
Radiation proctitis

- Radiation therapy for prostate cancer in men and cervical cancer in women
- Significant rectal bleeding generally develops in 9 months after radiation injury
- Endoscopic findings
 - mucosal friability, pallor, telangiectasias, fistula, and ulcerations
- Endoscopic therapy with APC



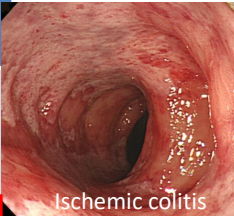
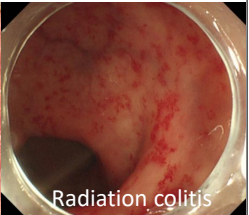
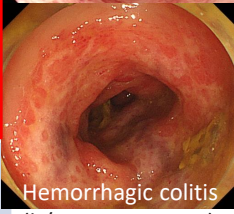

Observation Point for DDx: Continuity of Lesions

| Features of continuity | Common IBDs |
|----------------------------|---|
| Continuous from rectum | UC PMC Shigellosis Campylobacter colitis |
| Continuous at 1-2 segments | Ischemic colitis Radiation colitis Antibiotics-associated hemorrhagic colitis Yersinia enterocolitis |
| Skip lesions | CD Tuberculous colitis Amebic colitis |

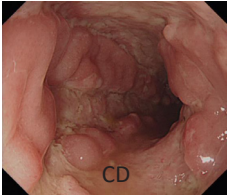
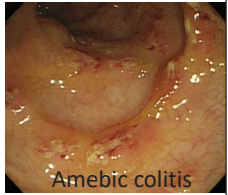
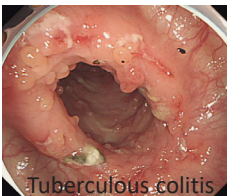


From Messmann
Atlas of Colonoscopy.

Observation Point for DDx: Continuity of Lesions

| Features of continuity | Common IBDs | | |
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Observation Point for DDx: Continuity of Lesions

| Features of continuity | Common IBDs | | |
|----------------------------|--|---|--|
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| Continuous at 1-2 segments | Ischemic colitis Radiation colitis Medication-associated hemorrhagic colitis Yersinia enterocolitis |  |  |
| Skip lesions | CD Tuberculous colitis Amebic colitis |  | |

Observation Point for D Dx: Features of ulcers

| Morphology & Direction | Common IBDs | Mucosal change adjacent to ulcers | Common IBDs |
|------------------------|--|-----------------------------------|--|
| Longitudinal ulcer | CD Ischemic colitis | Discrete ulcer | Most chronic colitis - CD - Tuberculosis - Behcet's colitis - CMV colitis - Chronic amebic Colitis |
| Circular ulcer | Tuberculosis Severe ischemic colitis CD | Inflammatory ulcer | Most acute colitis - UC |
| Deep & steep ulcer | Behcet's colitis | | |

Non-IBD and noninfectious colitis

- Rare forms of colitis—which include colitis not caused by infectious agents or chronic IBD—are often troublesome for both the patient and the physician, especially during the often protracted diagnostic process.
- Only a few randomized controlled studies have been performed in the recently characterized and rare forms of colitis and, most therapeutic principles are still empirical.

악성 질환과 감별이 필요한 상부 위장관 질환들

- 내시경 소견을 중심으로

민 병 훈

성균관대학교 의과대학 삼성서울병원 소화기내과



악성 질환과 감별이 필요한 상부 위장관 질환들

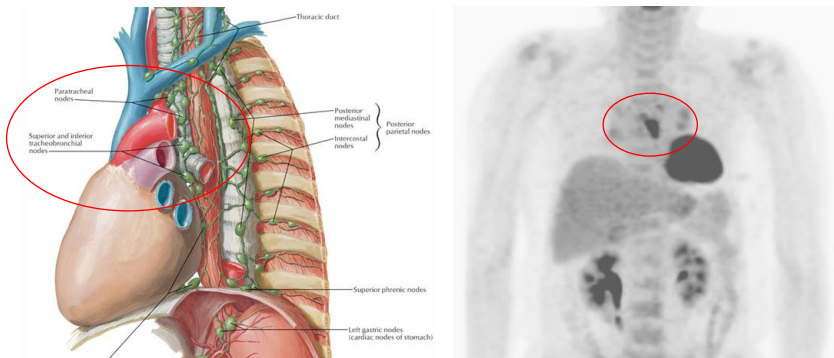
- 증례와 내시경 소견을 중심으로

삼성서울병원 소화기내과
민 병 훈



Tuberculous Esophagitis

- 인접한 결핵성 종격동 림프절염의 식도 침범
 - 결핵 식도염의 가장 흔한 원인
 - Subcarinal LN, Tracheobronchial LN, Paratracheal LN
 - 중부 식도에 결핵 식도염 호발

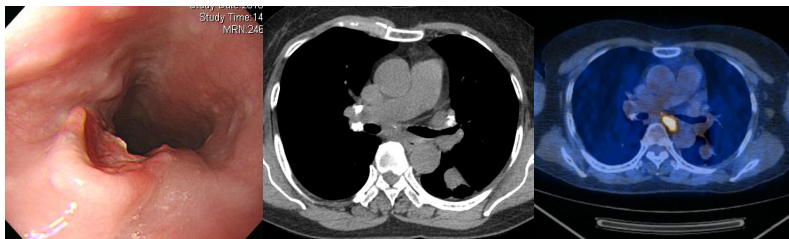


MEDICAL CENTER

Tuberculous Esophagitis

- Endoscopic findings

- 궤양형 >> 비후형, 과립형
- 변연이 융기되고 가운데는 깊이 파인 궤양성 종괴 형태 → 식도암과 유사
- 명확한 궤양 경계
- 중부 식도에 호발



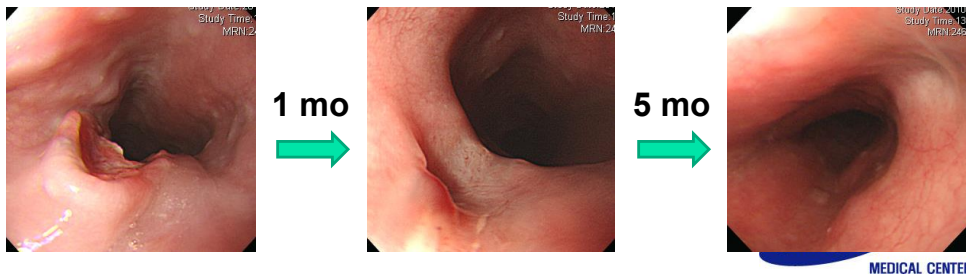
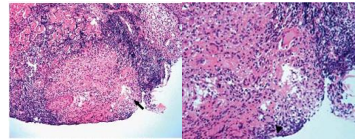
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Tbc Esophagitis mimicking Eso Cancer

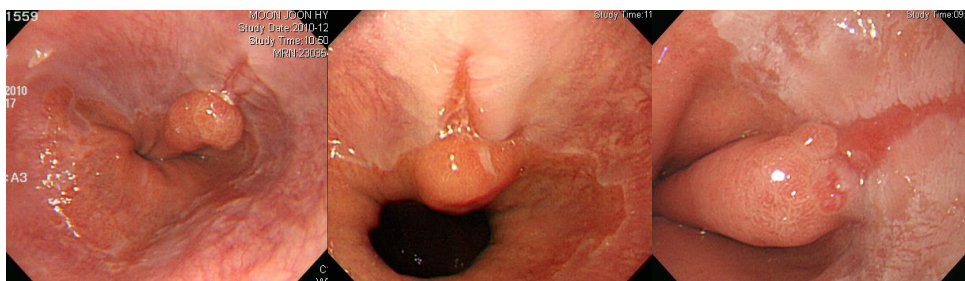
- Differential diagnosis from esophageal cancer

- 내시경 소견상 식도암이 의심되나 생검 조직에서 비특이적 진단이 연속해서 나올 경우
 - Bx: Inflamed granulation tissue
- 병리와 연락: 항산균(ACB) 염색, Caseation necrosis
- 경험적(empirical) 항결핵제 투여 → 진단 겸 치료



Sentinel Polyp

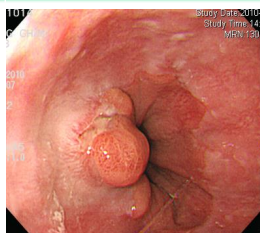
- Associated with GERD
- Near gastroesophageal junction (GE junction)
- Inflammatory polypoid lesions at gastric cardia
 - On gastric fold
- Risk of malignancy: nearly none



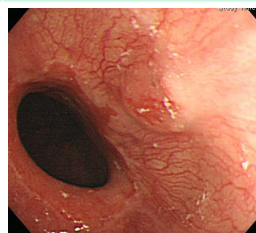
Endoscopic Differential Diagnosis

- Not clear cut → **Biopsy** is essential!!!

| | Sentinel Polyp | Barrett's Cancer/Dysplasia |
|--------------------|--------------------------|-----------------------------|
| Associated finding | Reflux esophagitis | Barrett's esophagus |
| Shape | Protruding in many cases | Flat elevated in many cases |
| Location | On gastric fold | Distal esophagus |



After PPI treatment



Ultra short Barrett's esophagus

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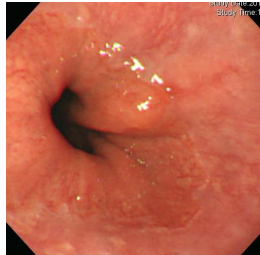
Endoscopic Differential Diagnosis

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| | Sentinel Polyp | Barrett's Cancer/Dysplasia |
|--------------------|--------------------------|-----------------------------|
| Associated finding | Reflux esophagitis | Barrett's esophagus |
| Shape | Protruding in many cases | Flat elevated in many cases |
| Location | On gastric fold | Distal esophagus |



Sentinel polyp at presentation



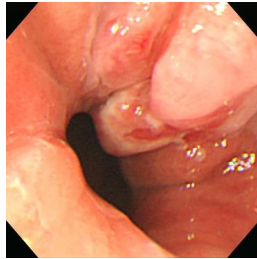
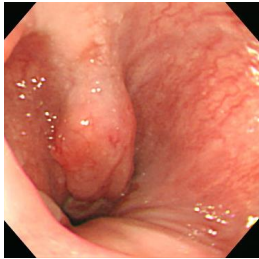
After PPI treatment

SAMSUNG

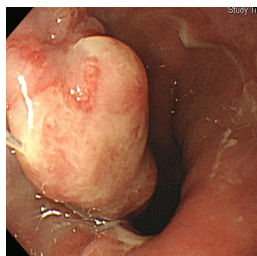
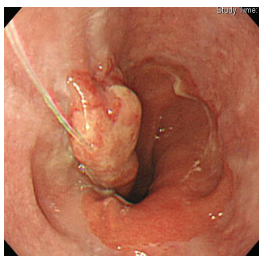
MEDICAL CENTER

Cardiac GC mimicking Sentinel Polyp

- Cardiac GC is increasing → **Biopsy** is essential!!!



PM, 2.2 cm, P/D



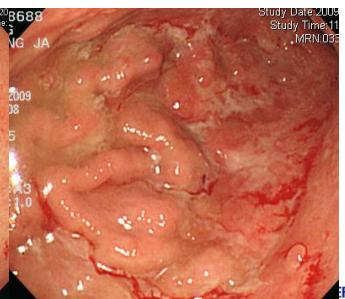
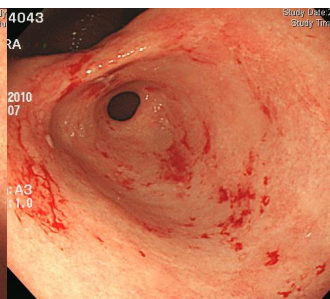
SM3, 2.2 cm, P/D



Gastric Syphilis

- Endoscopic findings

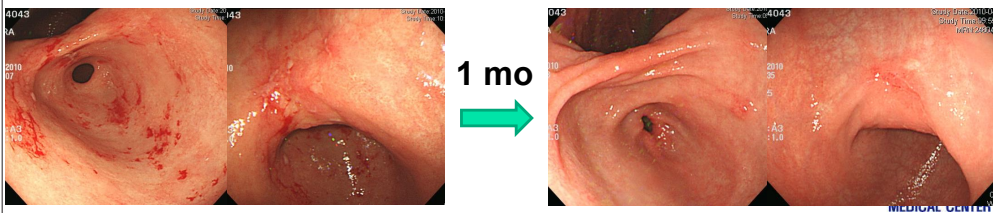
- 부정형의 미란과 얇은 궤양
- 자발성 출혈
- 전정부와 위각부에 호발
- 진행된 경우 점막의 비후 동반, 위 근위부 침범
 - AGC Borrmann type 4와 유사한 내시경 소견



Gastric Syphilis mimicking AGC

- Differential diagnosis from AGC

- 내시경 소견상 위암이 의심되나 생검 조직에서 비특이적 진단이 연속해서 나올 경우
 - Bx: Ulcer with plasma cell infiltration
- 매독에 합당한 혈청학적 검사소견
 - 선별검사: Rapid plasma reagin (RPR)
 - 확진검사: FTA-ABS, TPLA
- 경험적(empirical) Penicillin 투여 → 진단 겸 치료



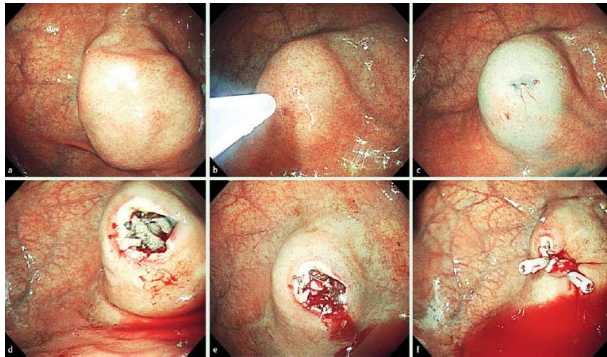
EUS-guided Fine Needle Biopsy

- 43 gastric SET > 2 cm
- 22-gauge ProCore
- Outcomes
 - Successful puncture: 100%
 - Diagnostic: **86.0%**
 - Suggestive: **4.7%**
 - Nondiagnostic: 9.3%
- Diagnostic yield in SMC & AMC
 - 80-90%



Lee MJ, et al. Medicine 2015;94:e1622
Lee JH, et al. Scand J Gastroenterol 2016;51:486-93

Unroofing Biopsy



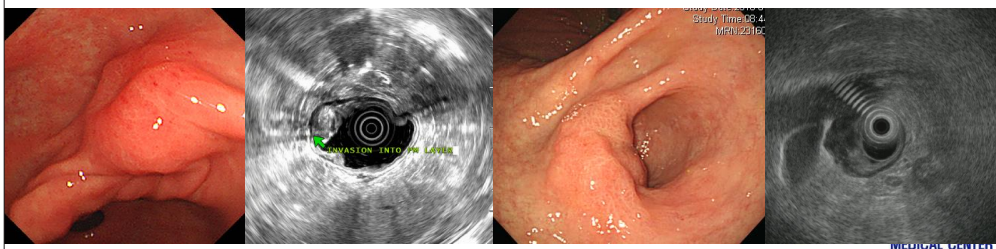
- N = 40
- Diagnostic yield: 90% (36/40)
- No procedure-related complication

Tae HJ, et al. Endoscopy 2014;46:845-50
Kim JS, et al. Surg Endosc 2016;30:5304-9

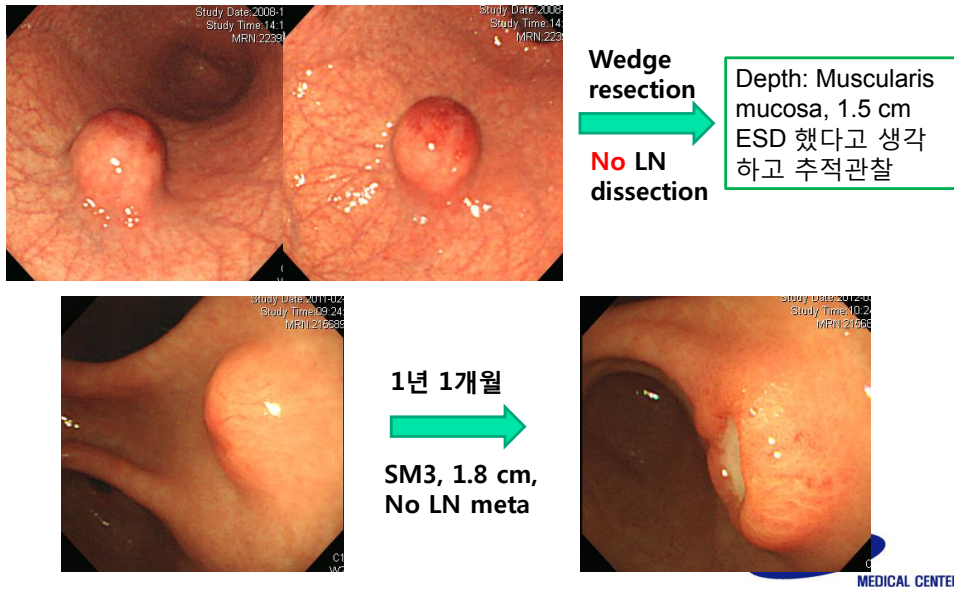


AGC mimicking Subepithelial Tumor - Differential diagnosis from GIST

- EUS
 - AGC: disrupted mucosal & submucosal layer
 - GIST: preserved mucosal & submucosal layer
- CT
 - AGC: perigastric LN metastasis
 - GIST: usually no perigastric LN metastasis

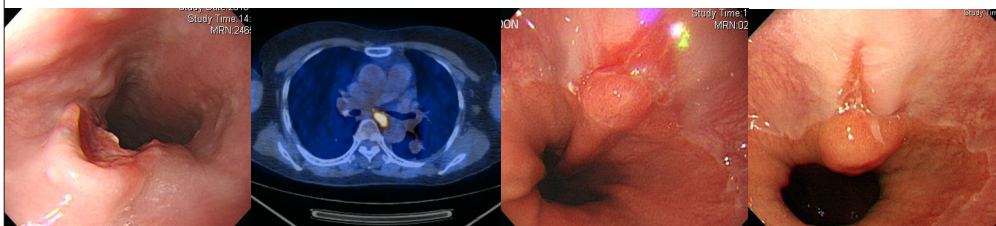


EGC mimicking Subepithelial Tumor - Need for **biopsy & follow-up**



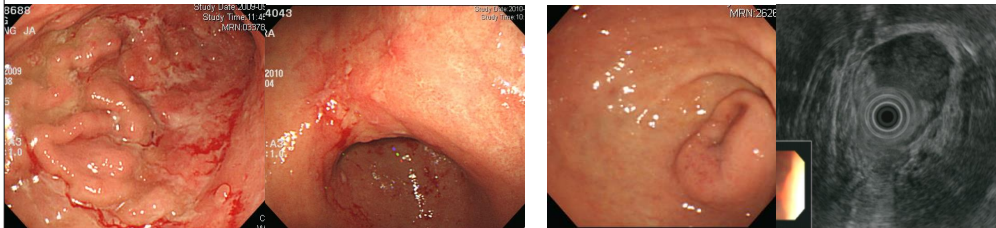
Summary

- Tuberculous esophagitis
 - 식도암 의심 내시경 소견, 조직검사 음성시 감별 필요
 - 경험적(empirical) 항결핵제 투여 → 진단 겸 치료
- Sentinel polyp
 - Barrett's adenocarcinoma, Cardiac GC와 감별 필요
 - 내시경 소견만으로 감별 어려운 경우 많음
 - 첫 검사에서는 반드시 조직검사 시행 필요!!!



Summary

- **Gastric syphilis**
 - 위암 의심 내시경 소견, 조직검사 음성시 감별 필요
 - 매독에 합당한 혈청학적 검사소견
 - 경험적(empirical) Penicillin 투여 → 진단 겸 치료
- **AGC mimicking gastric subepithelial tumor**
 - EUS: disrupted mucosal & submucosal layer
 - CT: perigastric LN metastasis



대장에서 궤양이 보일 때

김 영 호

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대장내시경에서 궤양이 보일 때

성균관대학교 의과대학 삼성서울병원

김 영 호

Infectious Colitis

- Symptoms
 - acute onset
 - fever, vomiting, abd pain, frequent bowel movement
- Endoscopy
 - severe hyperemia, profuse exudate
 - rectal sparing, patchy distribution

Infectious Colitis

- Regardless of the etiology, clinical symptoms are quite similar.
- It is hard to prove the existence of pathogens.
- Patients whose symptoms have not improved within 1 week should undergo a sigmoidoscopy or colonoscopy.

Ischemic Colitis

- Old age
- Sudden onset of abdominal pain & hematochezia
- Endoscopy
 - hyperemia, edema, ulceration
 - rectal sparing
 - resolved within 1-2 weeks
 - Bx : coagulation necrosis

Solitary Rectal Ulcer Syndrome

- A chronic course characterized by rectal bleeding, disordered defecation, tenesmus and mucorrhea
- Endoscopy
 - anterior wall, 4 to 15 cm from the anal verge
 - shallow ulcers with white, sloughy base surrounded by a thin rim of erythematous mucosa

Solitary Rectal Ulcer Syndrome

- Histology
 - characteristic
 - obliteration of lamina propria by fibromuscular proliferation of the muscularis mucosa
 - streaming of fibroblasts and muscle fibers up between crypts
 - thickening of muscularis mucosa
 - branching, distorted glandular crypts
 - diffuse collagen infiltration of lamina propria

Crohn's Disease

“Discontinuous, transmural inflammation from esophagus to rectum”

- Aphthous ulcer
- Longitudinal ulcer
- Cobblestone appearance

크론병 진단기준개정안 (일본후생청, 1995)

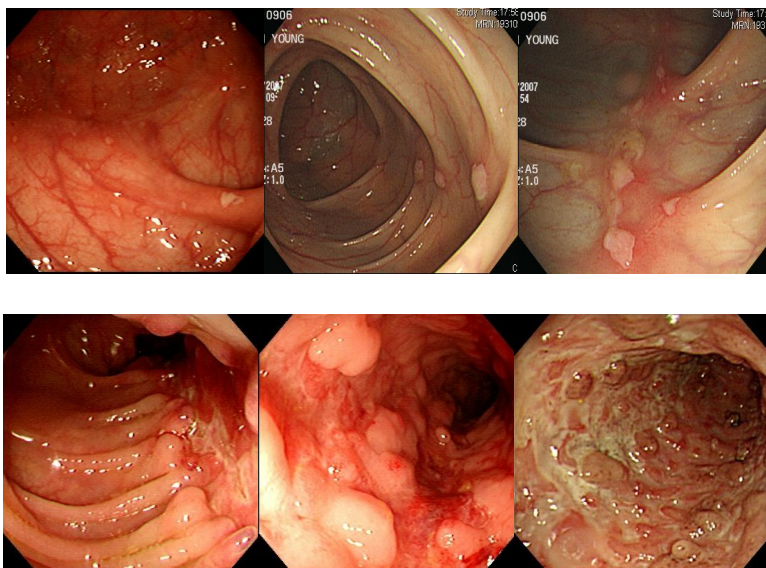
1. 주요조건
 - A. 종주궤양
 - B. 부석상
 - C. 비건락성 유상피세포 육아종
2. 부조건
 - a. 종렬한 부정형 궤양 또는 아프타
 - b. 상부소화관과 하부소화관 모두에서 인정된 부정형 궤양 또는 아프타

확진: 1. 주요조건 A 또는 B를 가진 것^{#1,2}
 2. 주요조건 C와 부조건 a 또는 b 중 어느 것인가를 가진 것

의진: 1. 부조건 a 또는 b 중 어느 것인가를 가진 것^{#3}
 2. 주요조건 C만을 가진 것^{#4}
 3. 주요조건 A 또는 B를 가지나 허혈성 대장염, 궤양성 대장염과 감별이 되지 않는 것.

^{#1} A, 종주 궤양만의 경우에는 허혈성 대장염이나 궤양성 대장염을 감별진단하여야 한다.
^{#2} B, 부석상만의 경우 허혈성대장염을 감별진단하여야 한다.
^{#3} 부조건 b만으로 의심할 경우는 이 소견이 3개월 계속 존재하여야 한다.
^{#4} 상결핵 등의 육아종을 가진 염증성 질환을 제외하여야 한다.

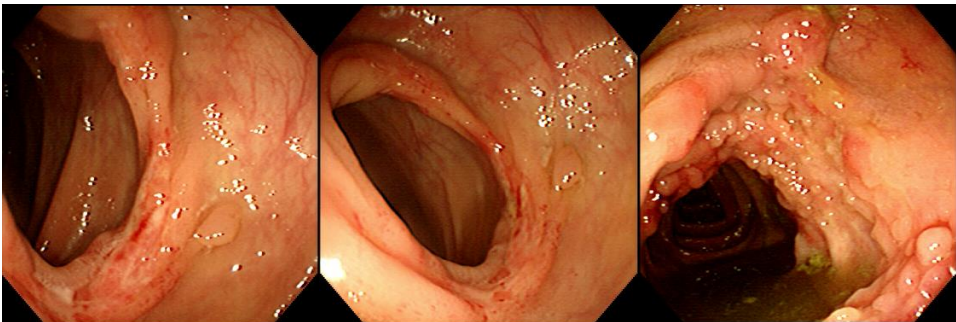
Crohn's Disease



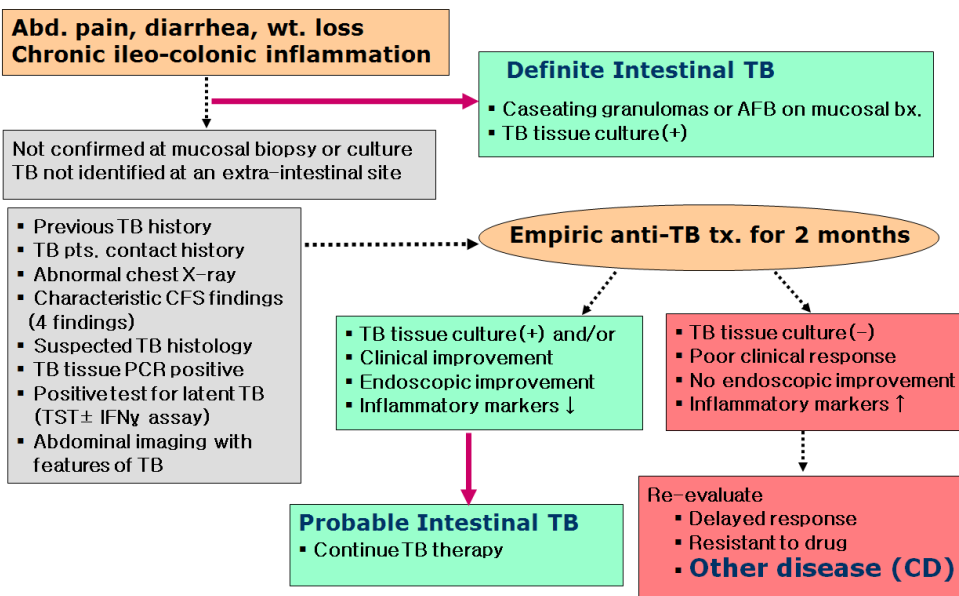
Tuberculous colitis

- Transverse ulcer
- Patulous IC valve
- Inflammatory polyps

Tuberculous Colitis



Diagnosis of Tuberculous Colitis_Korean Guideline



Behçet's Disease

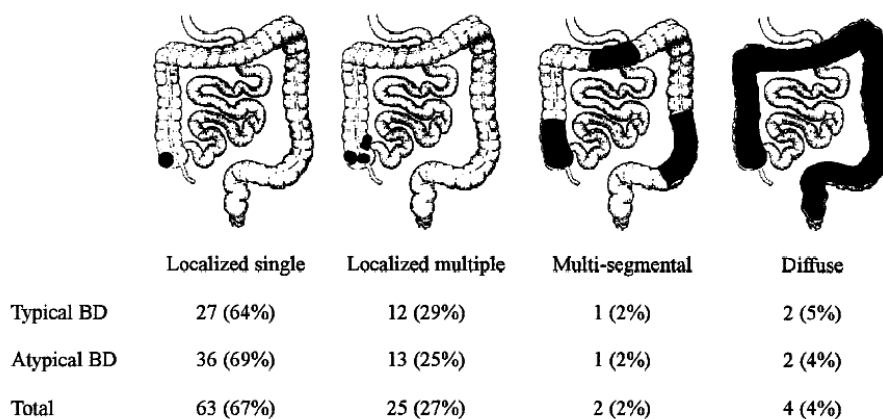


FIG. 2. The distribution pattern of lesions in intestinal Behçet's disease.

Lee CR, et al. Inflammatory Bowel Disease 2001;7:243

Behçet's Disease

Typical colonoscopic finding ;
Single or a few deep round/oval ulcers with discrete
margin in ileocecal area

Behçet's Disease

