


HARRIS COUNTY
INSTITUTE
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THE PERFORATED JEJUNUM: A CASE SERIES

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INTRODUCTION

- Intestinal perforation is due to an insult or injury to the bowel wall
- Peritonitis - major complication with significant mortality rate



INTRODUCTION

- Intestinal perforation
 - Up to 40% of hospital admissions due to an acute abdomen
 - Surgical emergency
- Presentation
 - Features of obstruction or perforation, or both



INTRODUCTION

- Incidence of small bowel perforation
 - I in 300,000 to 350,000
 - Duodenum > Ileum > Jejunum
 - Typhoid infection is the most common aetiology on a global scale
 - Usually involves the ileum



AETIOLOGY: SMALL BOWEL PERFORATION

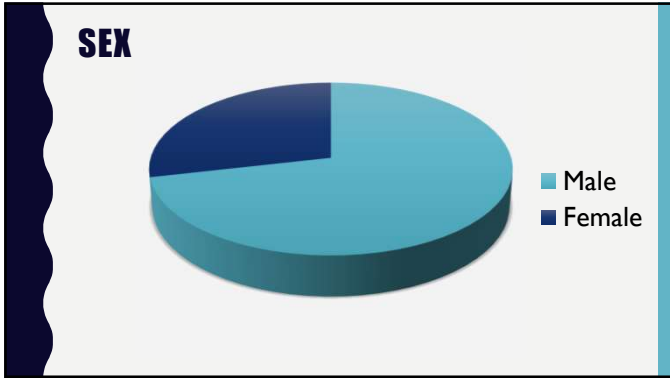
- Trauma
- Foreign bodies
- Iatrogenic
- Irradiation
- Obstruction
- Inflammatory diseases
- Atherosclerosis
- Peptic ulcer disease
- Vascular disease
- Drugs
- Tumours
- Congenital abnormalities
- Graft versus host disease

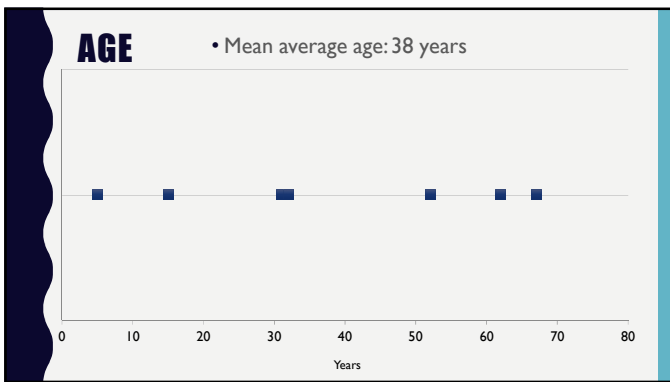


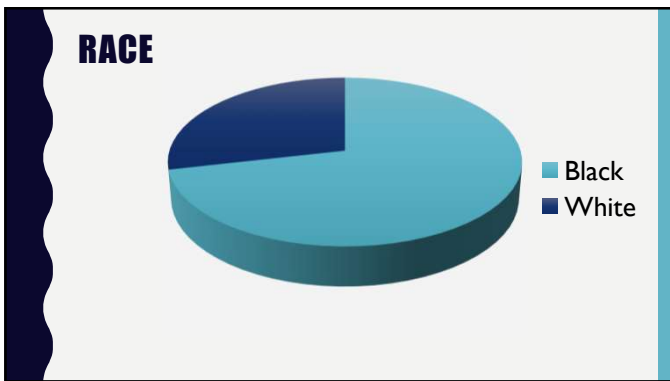
METHODS

- Harris County Institute of Forensic Sciences, Houston, Texas
- Database searched: 2006 – 2019
 - 19 fatalities certified due to small bowel perforation
 - 7 due to perforation of the jejunum
 - 12 cases did not specify the exact site

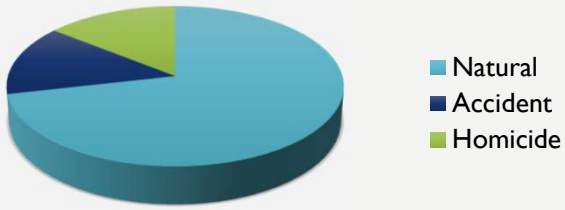








MANNER OF DEATH



NATURAL DEATHS

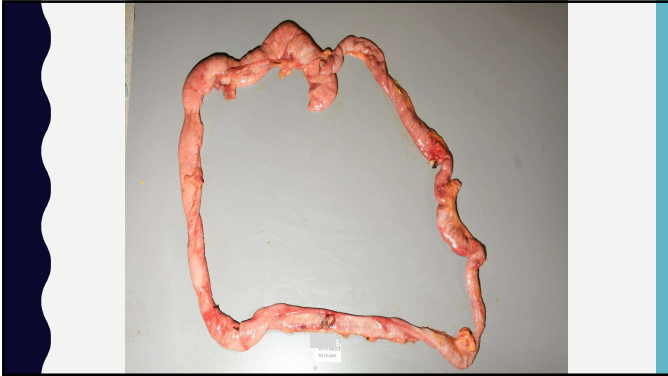
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- Two cases: perforation of undetermined aetiology
- Perforation of adynamic ileus
- Perforation following surgical repair of a hernia
- Perforation associated with Zollinger-Ellison syndrome

CASE 1



- 32 year old man, mental retardation, autism
- Non-verbal but ambulatory
- Found dead in bed at care home
- No apparent distress the previous evening



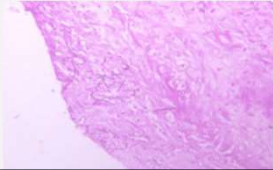




DISCUSSION: CASE 1

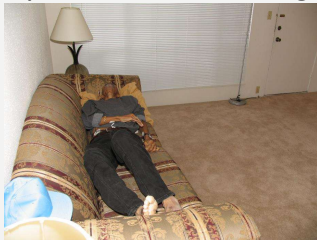
- No underlying aetiology identified
- Fungi within jejunal wall
 - Case reports of duodenal candidiasis and perforation in immunocompetent patients

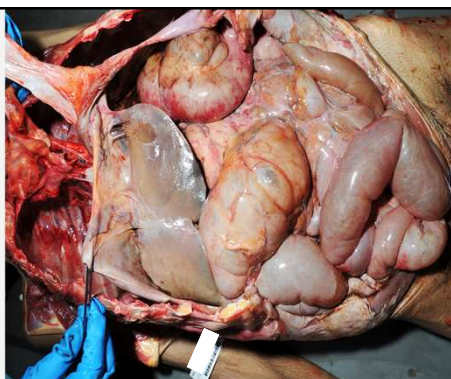
Jain A, Lohish P, Garg L, Ghuliani D, Khurana N. Duodenal candidiasis - a rare cause of giant duodenal perforation in immunocompetent patient. *Int Surg* 2018;5:749-51



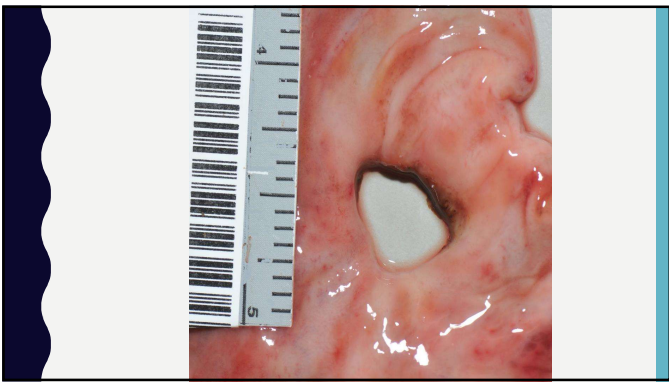
CASE 2

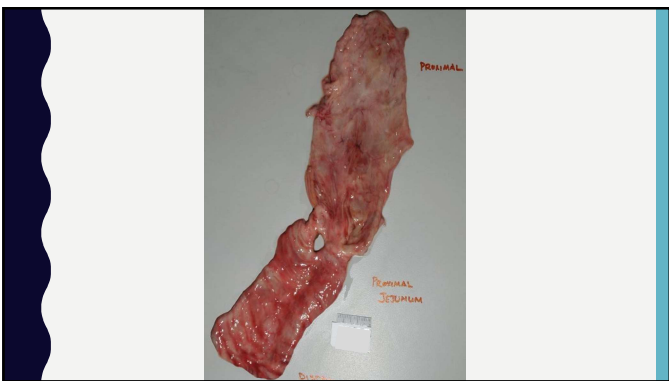
- 67 year old man
- 2 day history of diarrhoea and vomiting











DISCUSSION: CASE 2

- Peripancreatic mass with neuroendocrine features
- Zollinger-Ellison syndrome
 - Multiple, recurrent ulcers
 - Often in atypical locations, such as jejunum



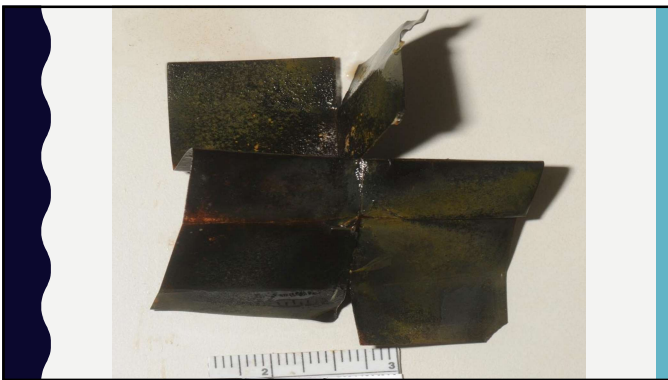
ACCIDENT: CASE 3

- 52 year old man, schizophrenia
- Recent inguinal hernia repair
- Collapsed in bathroom





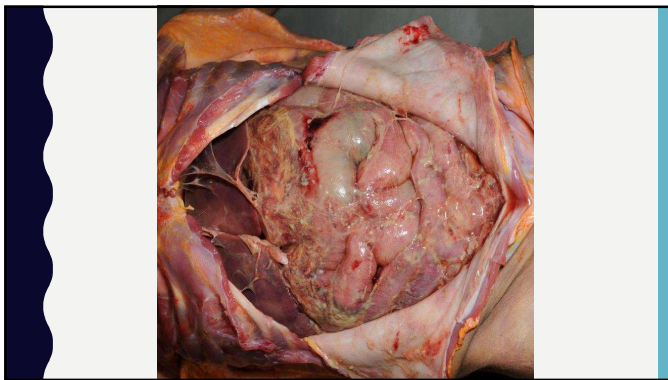


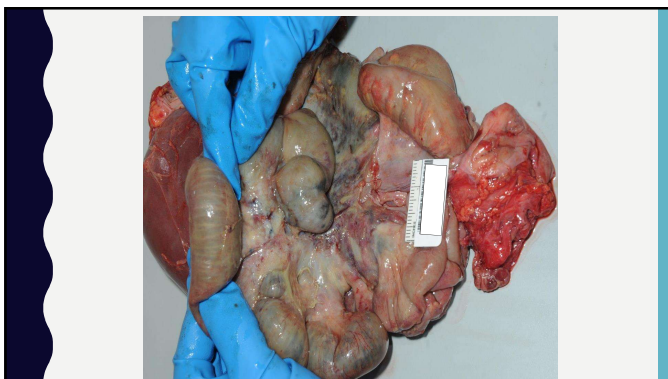




HOMICIDE: CASE 4

- 5 year old, cerebral palsy, seizures
- Found dead underneath siblings bed









BLUNT FORCE TRAUMA OF THE ABDOMEN

- Bowel perforation occurs in 1 – 7% of paediatric cases
- Isolated jejunal perforation occurs in less than 1% of cases
- Mortality 30%

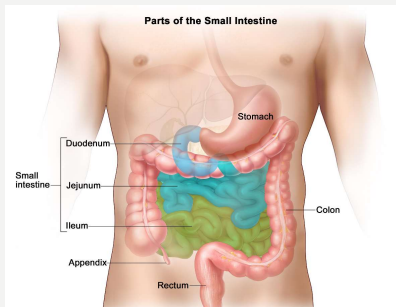
ASSOCIATED MEDICAL HISTORY

- Schizophrenia
- Cerebral Palsy
- Trisomy 9
- Autism, mental retardation



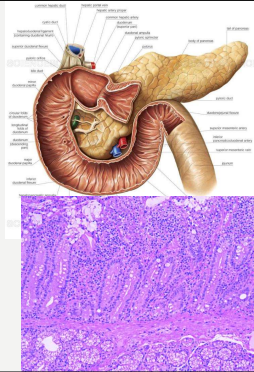
DIAGNOSIS AT AUTOPSY

GROSS ANATOMY



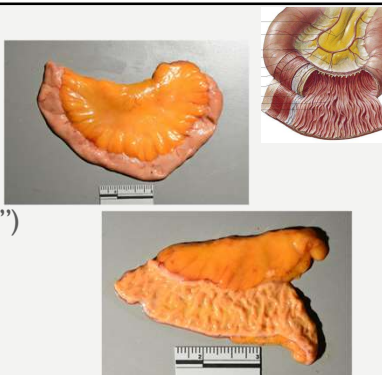
DUODENUM

- First part of small intestine
- Retroperitoneal except for first inch
- Opening of pancreatic and common bile ducts



JEJUNUM

- Second part of small intestine
- From the Latin, jejunus (“fasting”)
 - Often empty after death
- Plicae circulares



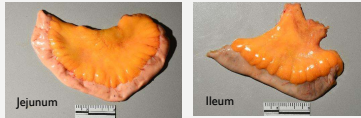
ILEUM

- Third part of small intestine
- Peyer’s patches



JEJUNUM VERSUS ILEUM

- No distinct line or anatomic landmark between them
- Plicae circularis become smaller and absent in terminal ileum
- No Peyer's patches in the jejunum
- Ileum has a smaller luminal diameter and thinner wall



JEJUNUM VERSUS ILEUM

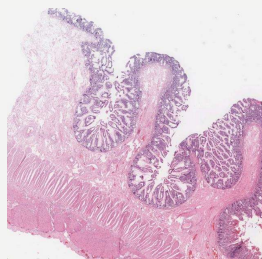
- Jejunum: left upper and central abdomen
- Ileum: right lower and central abdomen
- Mesentery of ileum has more adipose tissue
 - Vessels more prominent in jejunal mesentery



HISTOLOGY

Jejunum

- Characteristic features
- Villi
 - Crypts of Lieberkühn
 - Paneth cells
 - No Brunner's glands
 - No Peyer's patches



HISTOLOGY

Ileum

Characteristic features
- Peyer's patches



CONCLUSIONS



- Perforation of the jejunum is rare
- Possible association with mental illness or retardation
- Mostly natural deaths
- Identification of the precise location within the small intestine at autopsy
