ER-GS Combined Meeting

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Date: 2010/07/21

Discussion

- Acute abdomen
- Gastrointestinal toxicity of radiation therapy
- Small bowel perforation after radiotherapy for cervical carcinoma

Acute abdomen

The first principles of diagnosis is

- History
- PE

History

- 按時間順序
- Abdominal pain
  - Quality
  - Associated symptoms
  - Location
  - Duration
  - Factors that provoke and relieve the pain

PE

- The general appearance
- Vital signs (TPR, BP)
- Inspection
- Auscultation
- Palpation
- Percussion

Sign of acute abdomen

Sign	Description	Clinical Correlation
Guarding	Spasms of the abdominal muscle	Peritonitis (ruptured viscus)
Voluntary	Conscious elimination of spasms possible	
Involuntary	Conscious elimination of spasms not possible	
Blumberg's sign (rebound tenderness)	Elicited by pressing the abdominal wall deeply and then suddenly releasing and observing for pain	Peritonitis (ruptured viscus)
Murphy's sign	Elicited by having the patient take a deep breath while the right subcostal area is palpated and observing for abrupt cessation of inspiration because of pain	Cholecystitis
Turner's sign	Retroperitoneal dissection of blood resulting in bluish discoloration of the flanks	Pancreatitis
Cullen's sign	Retroperitoneal dissection of blood resulting in bluish discoloration of the periumbilical region	Pancreatitis
Psoas sign	Elicited by extending the right hip while the patient is in the left lateral decubitus position and observing for pain	Appendicitis
Obturator sign	Elicited by flexing the patient's right thigh at the hip with the knee flexed and then internally rotating the hip and observing for pain	Appendicitis
Rovsing's sign	Elicited by palpating deeply in the left iliac area and observing for referred pain in the right iliac fossa	Appendicitis

診斷推理

- 主觀描述(symptoms)
- 客觀評估(signs)
- 實驗檢驗(B-U-S)
- 影像檢查(XR-SONO-CT)

讀斷

Gastrointestinal Toxicity of Radiation Therapy

- ESOPHAGITIS
- GASTRITIS
- RADIATION ENTERITIS
- RADIATION PROCTITIS
- HEPATIC TOXICITY

Acute Radiation Enteritis

- Acute —diarrhea, abdominal pain, nausea and vomiting, anorexia, and malaise. Radiation-induced diarrhea often appears during the third week of treatment, with reports of frequency ranging from 20 to 70 percent.
- Diarrhea may occur after doses of 18 to 22 Gy delivered using conventional fractionation and will occur in most patients who receive doses of 40 Gy.
- The symptoms subside as the acute pathologic effects resolve and typically disappear two to six weeks after the completion of RT .

Vistad, I, Kristensen, GB, Fossa, SD, et al. Intestinal malabsorption in long-term survivors of cervical cancer treated with radiotherapy. Int J Radiat Oncol Biol Phys 2009; 73:1141.

Chronic Radiation Enteritis

- Late radiation effects typically are manifested 8 to 12 months after RT, although toxicity may not appear until years later in some cases .
- Late effects include malabsorption and diarrhea, with more rapid transit times occurring in the affected bowel. In rare cases, chronic malnutrition may develop, resulting in anemia and hypoalbuminemia. Bleeding from ulceration and pain and bloating from strictures, as well as fevers from abscess formation, may be present. Patients with severe disease may develop intermittent, partial or complete small bowel obstruction.

Vistad, I, Kristensen, GB, Fossa, SD, et al. Intestinal malabsorption in long-term survivors of cervical cancer treated with radiotherapy. Int J Radiat Oncol Biol Phys 2009; 73:1141.

Many factors influence the development of complications following radiotherapy

- The dose and type of radiation
- The use of chemotherapy
- The combined use of external beam and intracavitary radiation
- The history of abdominal surgery
- Underlying cardiovascular diseases

The dose and type of radiation

- The radiation dose at which 5 percent of patients will develop complications at five years (TD5/5) for limited volumes of small bowel is estimated to be 50 Gy. Significant intestinal toxicity is rare when treatment is limited to 45 to 50 Gy in 1.8 to 2.0 Gy daily fractions.
- Toxicity is more frequent in patients who have had abdominal surgery. In one series, surgery was required for small bowel obstruction in approximately 5 percent of postoperative patients who had received 45 to 50 Gy of RT over five weeks; the incidence rose to 25 to 50 percent at doses >50 Gy .Dose fractions >2 Gy also increase the risk of toxicity in the postoperative setting.

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The use of chemotherapy

- Combining chemotherapy with RT increases the risk of radiation enteritis. Several studies in patients treated with 5-FU-based chemoradiotherapy for rectal cancer have found a strong correlation between acute toxicity and the amount of small bowel irradiated at each dose level analyzed]. Limiting the volume of small bowel receiving >15 Gy may decrease the occurrence of severe diarrhea and improve treatment tolerance.
- Data from phase I and II studies suggest that integration of agents such as oxaliplatin, irinotecan, and EGFR inhibitors with RT may significantly increase the frequency of severe gastrointestinal toxicity compared to 5-FU-based regimens .

Vistad, I, Kristensen, GB, Fossa, SD, et al. Intestinal malabsorption in long-term survivors of cervical cancer treated with radiotherapy. Int J Radiat Oncol Biol Phys 2009; 73:1141.

The history of abdominal surgery

- Shibata et al found that 33% of patients with complications of radiotherapy had previously undergone abdominal surgery.

Shibata HR, Freeman CR, Roman TN. Gastrointestinal complications after radiotherapy for carcinoma of the uterine cervix. Can J Surg 1982;25:64-6.

Other factors influence the development of complications following radiotherapy

- DeCosse et al demonstrated a significant association between hypertension, diabetes, and cardiovascular disease and the subsequent development of radiation enteritis.

DeCosse JJ, Rhodes RS, Wentz WB, Reagan JW, Dworken HJ, Holden WD. The natural history and management of radiation induced injury of the gastrointestinal tract. Ann Surg 1969;170:369-84.

Small bowel perforation after radiotherapy for cervical carcinoma

- A retrospective study by Ramirez et al: showed that the median time to sigmoid perforation following radiation therapy for cervical carcinoma was 13 months (range, 3-98 months). The mean time from the onset of gastrointestinal symptoms to perforation was reported in the same study to be 90 days.

Ramirez PT, Levenback C, Burke TW, Eifel P, Wolf JK, Gershenson DM. Sigmoid perforation following radiation therapy in patients with cervical cancer. Gynecol Oncol 2001;82:150-5.

Small bowel perforation after radiotherapy for cervical carcinoma

- In contrast, Sher and Bauer and Rao et al reported cases of acute perforation with a 14-year latency period.
- Sher and Bauer even reported a case of perforation that occurred 37 years after radiotherapy.

Sher ME, Bauer J. Radiation-induced enteropathy. Am Gastroenterol 1990;85:121-8.

- Thanks for your attention!