A review of radiation proctitis and currently available treatments

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***Abstract* - After pelvic irradiation, radiation proctitis is a problematic side effect of radiation therapy for up to 75% of patients. Cancers of the prostate, ovary, cervix, and uterus are the most common indications for pelvic irradiation. In this review, we provide a summary of the choices for treating radiation proctitis, with a focus on the use of formalin as an inexpensive and accessible treatment option in India promptly and effectively.**

***Keywords* – Radiation proctitis, prostate, formalin**

INTRODUCTION

Treatment for pelvic cancers frequently includes radiation to the pelvis. Radiation usually affects rapidly reproducing cells like those present in cancer because it induces both apoptosis and cell death secondary to damage to DNA, proteins, and lipids[1]. 5-20% of individuals get complications from pelvic irradiation, most commonly radiation proctitis[2]. Acute and chronic radiation proctitis are often distinguished by the timing of symptoms in relation to the course of treatment as well as the presence of symptoms and indicators. Acute radiation proctitis is described as an inflammatory disease that only affects the superficial mucosa and develops up to three months after the start of treatment. The duration of chronic radiation proctitis can start early, even during the acute phase, although symptoms may not show up for months or even years after the end of treatment[1].

Up to 20% of patients with acute proctitis will experience symptoms such diarrhoea, nausea, cramps, tenesmus, urgency, mucous discharge, and mild bleeding, needing a break in treatment. In addition to the signs of acute radiation proctitis, chronic proctitis can also present with severe bleeding, strictures, perforations, fistulas, and intestinal blockage. When opposed to patients with acute proctitis, those who suffer from chronic radiation proctitis experience a noticeably worse quality of life[1].

DIAGNOSIS

There could be a history of tenesmus, diarrhoea, rectal haemorrhage, or fistulous communication. Colonoscopy or sigmoidoscopy may be necessary for the investigation of rectal bleeding to find the lesion and may complement the barium enema for the diagnosis of cancer recurrence. A dusky oedematous and inflammatory mucosa with a weakly visible vascular pattern is evident during the acute phase; friability is not prominent, and ulceration is uncommon. In advanced cases, the mucosa appears granular and friable; 10% of cases may involve numerous telangiectasia and ulceration of the anterior rectal wall. In addition to this, an abdomen-specific USG CT scan or MRI can be instructive. The lesion is detected through biopsy, although there is a possibility of haemorrhage and perforations of the necrotic wall. Therefore, it is not useful.

TREATMENT

Medical or surgical intervention is an option for treatment. Some patients may experience recurrent symptoms that necessitate surgery or may initially respond to medication therapy. The time between radiation and surgery might be anywhere from 3 months to 31 years[3,4].

1. and 2. Amino salicylic acid derivatives and corticosteroids

No proof exists that different corticosteroids and amino salicylic acid derivatives administered orally or through enema are helpful in avoiding progressive illness[5].

3. Sucralfate

Although the early outcomes of sucralfate enema were positive, the follow-up duration was less than two months. According to Melko GP (1999), people who are unable to tolerate or are resistant to treatment for radiation-induced proctitis may benefit from sucralfate suspension enema. 20 ml of 10% rectal sucralfate enema was administered to proctosigmoiditis patients by Kochhar et al three times daily till bleeding stopped. Three patients were given oral sucralfate by Sasai et al, and they observed positive outcomes[6].

4. Argon laser

Some patients (6-8% according to Buch)32 developed prolonged and significant rectal bleeding resistant to above treatment. Argon laser may be successful in this difficult situation[7].

5. Bipolar coagulation
Another method used for treating haemorrhagic proctitis is bipolar electrocoagulation[8].

6. Short chain fatty acids
Short chain fatty acid enema, which Anablea Pinto administered for five weeks to 19 patients with radiation proctitis and then monitored for six months, was found to accelerate the healing process in chronic radiation proctitis, although treatment must be ongoing[9].

7. Hyperbaric oxygen (HBO2)
HBO2 was used to treat 14 patients with persistent radiation-induced proctitis. One patient had a significant improvement in symptoms, giving the overall response rate of 64% for the group of nine patients. Follow-up lasted between 5 and 35 months (mean: 17 months). Five patients (or 36% of the group) were deemed nonresponders. Two patients had no clinical improvement, whereas three showed significant improvement during therapy but relapsed shortly after it ended[10].

8. Formalin

With regard to the Indian subcontinent, where patients cannot afford more expensive treatment options and frequently relapse, formalin has been utilised by numerous researchers to treat radiation proctitis patients.

Formalin was used by Seow-Choeu F (1993) to treat 8 individuals with hemorrhagic radiation proctitis. Formalin treatment application took 20 minutes. After two weeks, one patient required a second formalin application; the bleeding stopped right away in seven other individuals. No more bleeding was noticed, and no blood transfusion was required[11].

7 patients with radiation proctitis following radiation therapy for cervical cancer were treated by Coyoli-Garcia et al. in 1999. Through a stiff sigmoidoscope, the researcher placed 4% formalin-soaked gauze, maintained contact for 4 minutes, and repeated the process until bleeding stopped (median exposure time was 26 minutes). Six patients' bleeding stopped right after, one patient had minimal bleeding that lingered, and two patients developed fever within a day. Three patients required formalin application twice. Following that, 6 out of 7 patients did not experience another bleed or need a blood transfusion. For application, he employed peridural anaesthesia[12].

4% formalin was injected into the rectum in four separate 20 cc aliquots with a total mucosal contact time of 15 minutes in Counter et al (1999) treatment of 11 patients with rectal haemorrhage following pelvic irradiation. Only one patient needed to have the formalin applied again. After 3-64 months of follow-up, 100% success was observed[13].

Ismail et al. (2002) examined 20 patients who received a formalin dab and presented with hemorrhagic radiation proctitis. 12 patients stopped bleeding after one formalin dab session. Six patients required multiple sessions to achieve hemostasis. Two out of three patients who experienced copious bleeding did not respond to a formalin dab and needed to have their rectum surgically excised. Ten patients were treated by us at the Indira Gandhi Medical College in Shimla. Two patients responded to a second application of 4% formalin after responding to the first application in seven patients, and one patient was lost to follow-up because she passed away from an advanced type of cancer even though her proctitis symptoms had improved[14].

SURGERY

Patients with radiation proctitis occasionally need surgery to treat local problems such as pelvic fistulas (e.g., vaginal or bladder), uncontrolled bleeding, or persistent symptoms. The intention is to just remove a small portion of the diseased intestine, but if the lesion is too widespread, a bypass technique may also be tried. A review of the surgical literature revealed that since surgical operations might result in post-operative problems like local wound infections, sepsis, blockage, and fistulae, they should be simple and conservative and only used as a last choice[15].

PREVENTION

Preventive measures should always be tried to lower the incidence of radiation proctitis because treatment options are difficult. A surgically implanted polyglycolic biodegradable mesh that supports the intestines out of the pelvis is one of the prophylactic methods. The patient needs to be told to keep his or her bladder full so that the intestines will move out of the pelvis. Modern radiation therapy methods can help prevent the needless exposure of the intestines. Radiation proctitis can be prevented by using the proper packing to move the rectum and bladder away from the radioactive source. Amifostine-based pharmacotherapy has demonstrated good outcomes in the treatment of radiation proctitis. The majority of surgeons prefer a diversion colostomy for a proctitis that is medically untreatable[15].

CONCLUSION

Radiation proctitis has been a rare complication of radiation therapy. Improved radiation therapy techniques can decrease the incidence of radiation proctitis. Doses of radiation beyond the ability of normal tissue to repair by its own lead to radiation proctitis. Patients on radiation therapy must be periodically screened for malignancies symptoms can be improved by combination sucralfate ,steroid and pain control. In case of sever complication especially bleeding, formalin for endoscopy coagulation is found

to successful. Radiation can be prevent by surgical placement of polyglycolic mesh to support the intestine out of pelvis. There is high of post-surgical complication. another technique to prevent incidences of radiation proctitis is packing to push the rectum and bladder Away from radioactive sources. Therefore more studies need to be promoted to prevent and treat radiation proctitis. Tab. Amifostine can prevent radiation proctitis.

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