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ORIGINAL PAPERS

Effectiveness of argon plasma coagulation in the treatment of chronic actinic proctitis

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ABSTRACT

Introduction: there are two kinds of actinic proctitis – one is acute and self-limited, and lasts about 3 months; the other is chronic and develops months to years after radiation therapy. The incidence of chronic actinic proctitis is about 5-20% of radiated prostate tumors.

Objective: to evaluate the effectiveness of argon plasma coagulation in the treatment of chronic actinic proctitis.

Material and method: a retrospective search of patients with the diagnosis of actinic proctitis. The number of argon plasma coagulation therapies needed to achieve the symptom resolution was analyzed.

Results: we found 22 patients with a diagnosis of actinic proctitis. Nineteen were males (86.7%) and three (13.6%) were females. Nineteen patients (86.4%) had a diagnosis of prostate adenocarcinoma, one had a diagnosis of squamous-cell cervix carcinoma (4.5%), and two had a diagnosis of endometrial carcinoma (9.1%). The mean number of coagulation sessions needed for symptom resolution was 2.58 (absolute range 1-7) with a median of 2 sessions.

Conclusion: multiple treatments are described in the literature. None of them have shown promising results. Our results suggest that argon plasma coagulation is effective in the treatment of this condition, and achieves a rapid and sustained response with few sessions and a good safety profile.

Key words: Proctitis. Radiotherapy. Endoscopy. Actinic.

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INTRODUCTION

Actinic proctitis affects 5 to 20% of patients with a diagnosis of a pelvic malignant tumor receiving external beam radiotherapy (1-3). Its frequency is increasing. This increase is due to the increasing prevalence of cancers amenable to external radiotherapy, mainly prostatic adenocarcinoma. There are 2 types of actinic proctitis –acute and chronic. The former is normally self-limited in time and appears early during treatment or within 3 months after therapy completion. The latter usually develops months to years after treatment end, in most cases within 2 years (mean, 8-12 months).

Chronic actinic proctitis is due to obliterating endarteritis, submucosal fibrosis and new vessel formation (telangiectasia) (4). The most frequent form of presentation of chronic radiation proctitis is rectal bleeding (5). Many treatments are available for chronic actinic proctitis – 5-amino-salicylates, steroids, sucralfate, metronidazole, and short-chain fatty acids have been tried. None of them has shown promising results, though. Regarding endoscopic therapy formalin, heater probe, nd:YAG laser, KTP laser, and bipolar electrocoagulation have been assayed. These therapies have shown some efficacy but also important adverse effects (6). In the last few years argon plasma coagulation therapy has been developed. Its advantages are based on coagulation depth control, easy use, and low cost (4). Our goal was to evaluate the effectiveness of argon plasma coagulation in the treatment of chronic actinic proctitis.

MATERIAL AND METHODS

This is a descriptive study. We performed a retrospective search in our hospital's archive for patients treated with argon plasma fulguration for actinic proctitis between years 2004 and 2007. Inclusion criteria were:

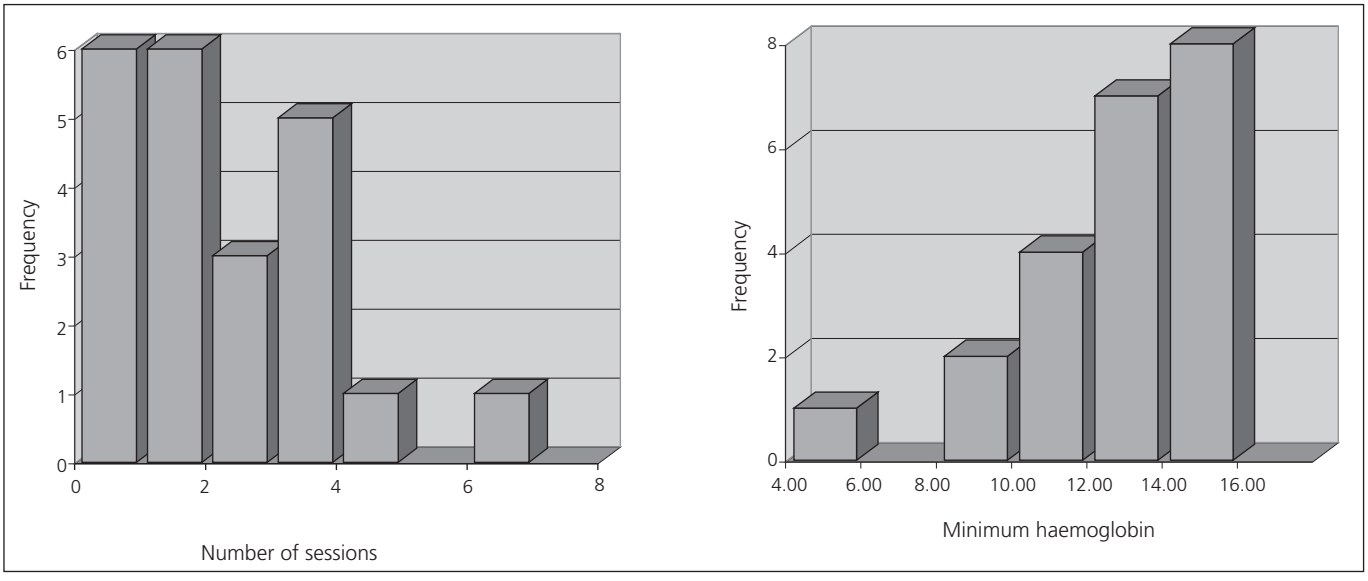

Fig. 1. Number of argon-plasma sessions necessary to achieve rectal bleeding remission. Distribution of minimum hemoglobin levels in each patient. *Número de sesiones de argón plasma necesitadas por cada paciente hasta alcanzar la resolución de la rectorragia. Distribución de los niveles mínimos de hemoglobina de cada paciente.*

a) endoscopic diagnosis of actinic proctitis; b) having received pelvic external radiotherapy at doses higher than or equal to 66 Gy; c) a histological diagnosis of pelvic malignancy (prostate or endometrial carcinoma, cervix carcinoma, bladder papillary carcinoma); and d) treatment with argon plasma coagulation.

Conventional endoscopes were used (Olympus exera cv 145, argon plasma Font ERBE APC 300). The probes used had a frontal exit. Treatment was applied in pulses with a duration lower than one second, avoiding the brushing of injuries, with an argon plasma flux of 2 L/min and power at 50 W. Sessions were repeated every 6-8 weeks until bleeding remission. Preparation was done with phosphosoda the previous day (Fig. 1).

Data regarding the number of sessions necessary to stop bleeding, number of blood transfusions, therapy-related side effects, comorbidity, cancer type, and doses administered were all recorded.

The distribution of the variables was analyzed graphically. Variables were expressed as mean ± standard deviation if they followed normal distributions and as median ± interquartilic range if they did not.

RESULTS

Twenty-two cases of actinic proctitis requiring treatment with argon plasma coagulation were found. Baseline patient characteristics are summarized in table I. Mean age was 74.3 years (± 7.5). Nineteen patients were men and three were women. Tumours radiated included: 1 cervix squamous-cell carcinoma, 2 endometrial adenocarcinomas, and 19 prostate adenocarcinomas (Table II). One of the patients had two cancers, one prostate adeno-

Table I. Baseline characteristics

Characteristics	*Number of patients*	*Percentage*
Sex		
Male	19	86.7%
Female	3	13.3%
Toxic habits		
Alcohol abuse	1	5%
Smoking	6	27.3%
Comorbidity		
Diabetes mellitus	3	13.6%
Ischemic cardiomyopathy	6	27.3%
Heart failure	2	9.1%
COPD	2	9.1%
Chronic liver disease	2	9.1%
Renal failure	3	13.6%

Table II. Primary tumour characteristics

Localization and tumour staging	*Number of patients*	*Percentage*
Prostate	19	86.4%
T1cN0M0	9	
T2aN0M0	1	
T2bN0M0	2	
T3aN0M0	3	
T3bN0M0	2	
Cervix	1	4.5%
T3bN0M0	1	
Endometrial	2	9.1%
IIIA	2	
Bladder	1	
T1aN0M0	12	

carcinoma and one bladder papillary carcinoma. Radiation doses administered were 70 Gy for 70% of cases. Median haemoglobin nadir was 11 g/dl (10.9-13.0), median number of sessions needed to stop rectal bleeding was 2 (1-4). Only two patients required blood transfusions because of a big drop in hemoglobin concentration. Few patients were on antiplatelet or anticoagulant treatment. In fact, we found only two –one was on 100 mg/day AAS and one was on 75 mg/day clopidogrel.

We identified no treatment-related adverse events with argon plasma.

DISCUSSION

Therapeutic options described in the literature for rectal bleeding due to chronic actinic proctitis are diverse and have to be selected based on symptoms (RTOG/EORTC of acute and chronic toxicity scales) (6-8). In patients with grade-1 proctitis enemas with steroids and 5-ASA derivatives can be used. Although there is no evidence of endoscopic efficacy, patients feel a subjective improvement of symptoms (9,10). Short-chain fatty acids can also be used because of their trophic effect on the rectal mucosa, but only some studies have demonstrated a decreased number of bleeding episodes and improved endoscopic changes (9). Another option is oral metronidazole and enemas with betamethasone and mesalazine, as this combination has demonstrated a significant reduction in the incidence of rectal bleeding, ulcers, diarrhoea, and erythema (10). Patients refractory to the aforementioned treatments and with grade 2-3 chronic proctitis could benefit from endoscopic treatment including chemical cauterization of bleeding vessels and ulcers using 4% formalin. This method has demonstrated in prospective studies responses in 67 to 89% of cases, with 5% of important adverse events such as anal ulceration, rectal stenosis, incontinence, and anal pain (11). Other possible endoscopic treatments are argon plasma coagulation and Nd:YAG laser. This latter option has results similar to argon plasma coagulation but is a more expensive option with a higher proportion of adverse events (9). Other treatments are described, like hyperbaric chamber oxygenation, that may affect angiogenesis by stimulating microvascularization. Anyway, all published series are retrospective and highly heterogeneous regarding cases included, although they report improvement rates without adverse effects of up to 65% (12-14). Another inconvenience is the high number of daily sessions necessary for improvement (20-40), and the scarce availability of specialized centres. Patients refractory to endoscopic treatment or with grade-4 rectal toxicity (fewer than 10%) may be surgically treated. Regarding treatment with argon plasma, reported responses vary between 83 to 100% of patients treated after 2-3 sessions, with very few complications (15-17). In our study we found no treatment-derived complication, and the percentage of patients that needed 3 or fewer sessions for symptom relief and endoscopic improvement was 68%. Therefore we conclude that our data are consistent with those published in the literature, and we confirm that endoscopic treatment with argon plasma is a cheap, easy-to-perform, safe, and highly efficacious technique for the treatment of rectal bleeding in patients with chronic actinic proctitis as a result of pelvic radiation therapy.

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