

## Prevalence of Anal Cancer in Patients Presenting with Different Proctological Issues: A 9 years' Experience (2010-2019)

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### ABSTRACT

From epidemiological perspective, anal cancer is a relatively uncommon condition, comprising respectively 1,5 % and 1-8% of all digestive System and anorectal malignancies. Traditionally this situation had been regarded as a nosologically entity of older women in 7th decade of life, with a sex ratio of 5 females vs 1 male [1,9 and 17]. These articles peruse is to determine the rate of anal malignancies occurrence among different proctological issues treated in our Surgical Department, in the times interval of 2010 to 2019. Thus, we enrolled in toto 29569 patients, 15115 (51 %) females and 14454 (48,8%) males, the median age was 18-70 years, 35 patients (0,11 %) were diagnosed with anal cancer, furthermore carcinoma in situ (Bowns disease) was the most prevalent (54 %) followed respectively by squamous cell carcinoma (31 %) and adenocarcinoma (9%). In hemorrhoids, group anal cancer was seen in 11 patients (0,09%) with an occurrence frequency of 1 in 1000 patients, in the group of anal fissures 2 patients (0,03%) had anal cancer with a frequency of 1 in 3000 patients. Anorectal fistula and perianal abscess were not associated with anal cancer. Anal HPV infection was more associated with anal cancer in the rate of 3,07% or 21 patients with an occurrence frequency of 1 in 30 patients. Pylonidal sinus was associated with anal cancer in 0,02% or 1 patient. In toto, the occurrence frequency of anal cancer in proctological issues is 1 in 1000 patients.

**Keywords:** Proctological issues, Anal cancer, Prevalence

### INTRODUCTION

Despite its increased incidence in both genders over the last decades, anal cancer remains relatively a rare event presenting 1,5 % of all digestive system malignancies and 1 to 8 % of all anorectal malignancies. Its sex ratio remains standard with 5 females vs 1 male. Traditionally, anal cancer used to involve older women especially from the 7th decade of age. Unfortunately, in this new generation, the increased prevalence of this neoplastic disease is directly correlated to different factors such as, receptive anal intercourse, immunodepression of different etiologies (HIV, corticosteroid use...), HPV infection especially serotypes 16,18, and smoking [1,2,9]. Most of anal cancer mimic benign proctological conditions regarding symptomologic features such as haemorrhoids, anal fissures, anal fistula, pruritus anis [10,11]. In this article, we aim to determine the occurrence of anal cancer in the group of patients presenting with any proctologic issue in our surgical Department during a times interval of 9 years as suss-mentioned in the title.

### RESULTS

#### Statistical analysis

29569 patients with different proctologic issues were enrolled, 15115 (51%) females and 14454 (48,8%) males, anal cancer was diagnosed in 35 patients (0,11 %), carcinoma in situ (Bowns disease) was more prevalent (54 %) followed respectively by squamous cell carcinoma (31%)

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and adenocarcinoma (9%) (Tables 1 and 2 and Figure 1). In the group of haemorrhoids, anal cancer was seen in 11 patients (0,09%) with an occurrence frequency of 1 in 1000 patients, anal fissure was associated with anal cancer in the range of 2 patients (0,03%) with a frequency of 1 in 3000 patients. Anorectal fistula and perianal abscess were not associated with anal cancer. Occurrence anal HPV infection

(Condyloma) was more associated with anal cancer in the rate of 3,07 % or 21 patients with an occurrence frequency of 1 in 30 patients. Pylonidal sinus was associated with anal cancer in 0,02% or 1 patient. In toto, the occurrence frequency of anal cancer in proctologic issues is 1 in 1000 patients (Table 3 and Figure 1).

Table 1. Patients Characteristics.

Proctology issue	Patient	Median age	Gender		Pathology	
			Female	Male	Benign	Anal cancer
Hemorrhoids	11780	50-60	9650	2130	11769	11
Anal fissure	6320	60-70	2200	4120	6318	2
Anorectal Fistula	4102	60-70	1271	2831	4102	0
Perianal abscess	1870	70-80	758	1112	1870	0
Anal condyloma	682	40-50	253	429	661	21
Pylonidal sinus	4815	18-40	983	3832	4814	1
<b>Total</b>	<b>29569</b>		<b>15115</b>	<b>14454</b>	<b>29534</b>	<b>35</b>

Table 2. Pathologic types of anal cancer.

ANAL CARCINOMA	
Carcinoma in situ (BOWNS disease): 19	Adenocarcinoma: 3
Squamous cells: 11	
Skins cancer: Basal cells: 2	
Melanoma: 0	

Table 3. Rate of anal cancer occurrence out of proctologic issues.

Proctology issue	Percentage of cancer	Frequency
Hemorrhoids	0.09%	1 in 1000 patients
Anal fissure	0.03%	1 in 3000 patients
Anorectal Fistula	0%	0
Perianal abscess	0%	0
Anal condyloma	3.07%	1 in 30 patients
Pylonidal sinus	0.02%	1 in 5000 patients
<b>Total</b>	<b>0.12%</b>	<b>1 in 1000 patients</b>

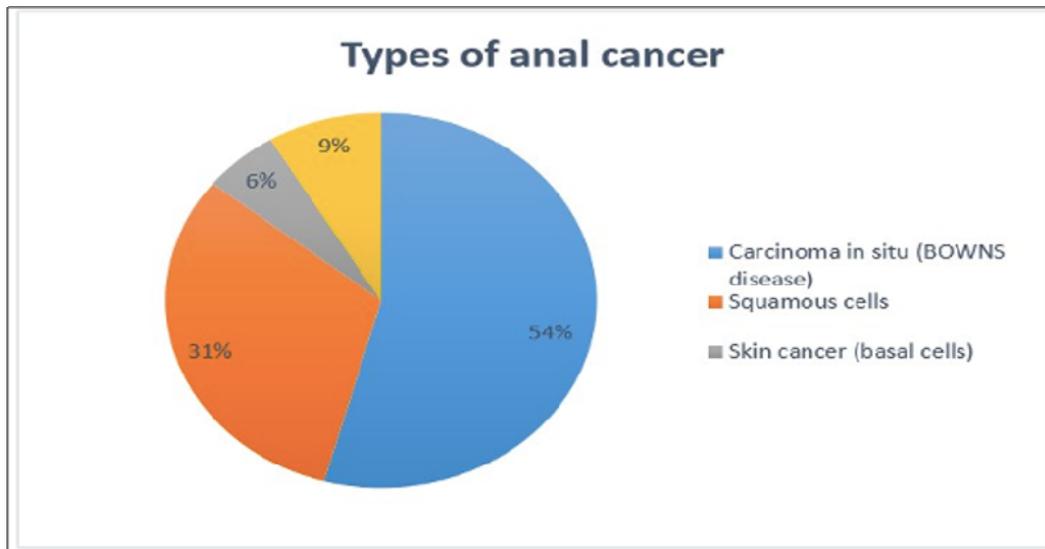


Figure 1. Pathologic types of anal cancer.

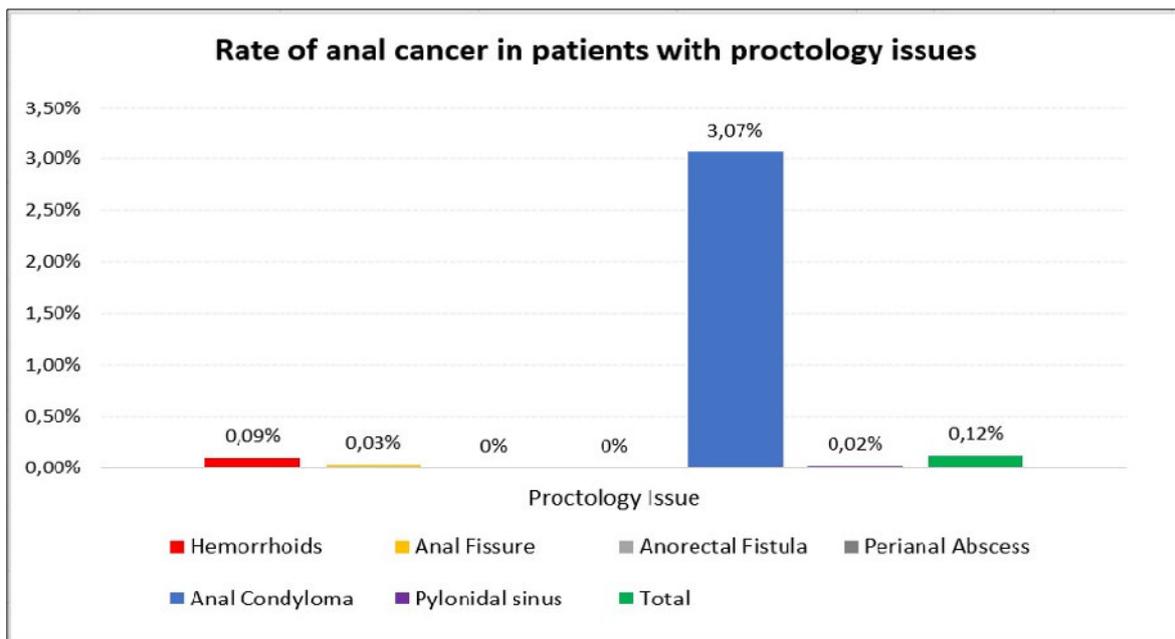


Figure 2. Rate of anal cancer in patients with proctological issues.

**DISCUSSION**

From anatomic perspective we mean by anal canal, the segment between the dentate line tend the anal verge. Moreover, the surgical view considers the anal canal, as the area from the palpable anorectal ring to the peri-anal skin. This later definition is the most widely accepted in practice and the most preferred by the American Joint Committee on Cancer (AJCC). Therefore, any tumour involving the

anorectal junction is stated as a rectal cancer in this case, the topography epicentre is more than 2 cm proximal to dentate line. In addition to, anal cancer is defined if the epicentre is 2 cm or less from the dentate line. Taxonomically, tumours of the peri-anal skin are designated as perianal cancers and resemble biologically to other skin tumours [72,13,30]. This contrast is crucial since anal cancers are more aggressive than cancers of the peri-anal skin, furthermore its incidence

is up to 5 times more common than that of anal margin lesions [12,13,16,30].

Consistently, anal cancer was regarded as a disease of older women, with onset in the 7<sup>th</sup> decade of life. This neoplastic entity used to be of a very rare occurrence. However, over the past decades its incidence has raised especially in women and in homosexual men. Additionally, for the past decade, its escalated incidence has redheaded the range of 2,2 % annually. Furthermore, this cancer represented 0,5 % of all cancers diagnosed in the USA [1,9,17-19]. Etiologically, the nowadays occurrence of anal cancer is more related to Human Papilloma Virus infection in 91 % so that the frequency of this malignancy is merged in younger people of both genders affected by this virus. Therefore, since the probability of developing this cancer is 120-fold when there is a pre-existing HPV ano-rectal infection, anal cancer in young people can be regarded as a sexually transmitted neoplastic disease which needs a prophylactic measure involving a sexual education in puberty and adolescent age groups as well as, a vaccination against this infectious agent. And the most oncogenic serotypes are HPV 16 and 18. thus, the biopsy is recommended once there is ano-rectal HPV infection especially when there is a coexistent HIV infection [2-8,14,26-28]. Results of peer-reviewed studies of anal cancer, including detection of HPVDNA, demonstrated that the prevalence of HPV16 and 18 in 72 % of patients, and includes screening for vaginal and cervical cancer and male external genitalia. Anal cancer has numerous risk factors apart from HPV such as a non-protected sexual life in term of multiple partners, anal receptive intercourse in both genders, history of vulvar or vaginal and cervical dysplasia or cancer, advanced age, smoking and immunosuppression related to different organs such as HIV infection or solid [15,16,20,22-25].

A study using data from the Danish Cancer Registry demonstrated that the probability of developing anal cancer after a diagnosis of cervical cancer or cervical intraepithelial neoplasia was three to five times as high as the probability of developing stomach or colon cancer with a strong association between cervical cancer and anal cancer. Frisch et al. have found an association between anal cancer and lymphoma or leukaemia and raises a possible role of immunodeficiency in the development of anal cancer [29].

Regarding pathologic perspective, 85 % of anal cancers are of squamous type [21,29] but in us study the most prevalent histologic type was carcinoma *in situ* (Bowns disease) with 54% followed squamous cell carcinoma with 31 % and adenocarcinoma with 9 %, skin cancer (basal cell) 6%. There was no case of anal melanoma in our study.

## CONCLUSION

Anal cancer remains a nosologic entity of rare occurrence even among different proctologic issues. Its incidence is nowadays increasing because of the epidemiologic profile of

HIV infection in both genders, especially in young population. We suggest a good sexual education in adolescent population as well as vaccination against this etiological as well as a screening ano-rectal biopsy in women with history of vulvo-vaginal HPV infection or cancer and in general in high risk patients such as immunocompromised patients from different origins.

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