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A STUDY OF DEMOGRAPHIC PROFILE OF THE MARJOLIN'S ULCER AND ITS IMPLICATIONS IN REDUCING INCIDENCE OF THE DISEASE AT A TERTIARY HEALTH CARE CENTRE IN INDIA

Plastic Surgery

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ABSTRACT

Introduction: Marjolin's ulcer is a rare malignancy that arises in chronic wounds especially burn scars and ulcers. In our study we found most of the patients affected belong to low socioeconomic groups & were illiterate. The large population residing in remote areas of the state like Sarguja, Korea etc are devoid of tertiary health care facility and education .The purpose of this study is to determine the demographic profile of these patients, to observe clinical and pathologic course of the disease in our state, the management provided to these patients and to determine implications to reduce the incidence of the disease.

Material & methods: This retrospective study was carried out in department of plastic and reconstructive surgery of Pt. JNM Medical college Raipur between October 2005-october 2008.Total 50 patients of non-healing ulcer suspected for Marjolin's ulcer were picked up randomly for study from outpatient department. The demographic profile, detailed clinical examination, measurements, routine investigations & histopathological examination was carried out.

Results: In our study out of 50 patients, 28 patients (56%) were benign ulcers & 22 patients (44%) were Marjolin's ulcer proved by histopathological examination. Out of 22 patients of Marjolin's ulcer, 19 patients underwent wide local excision followed by split skin graft coverage or cover by Flaps. 3 patients undergone amputation (2 legs and 1 hand) where bone was found invaded by tumour.

Conclusion: It is important and special need for early detection of pre-morbid conditions of the Marjolin's ulcer like hypertrophied scar, repeated ulcerations & contractures. It can be done by launching welfare programs, creating awareness and by educating people of remote areas regarding the disease. It is also imperative to launch effective training programs for local doctors and paramedical staff for early wound care managements and timely referrals of the patients to a nearby tertiary health care centre.

KEYWORDS

Marjolin's ulcer, hypertrophied scar , contractures.

INTRODUCTION:

Marjolin's ulcer is a malignant transformation of chronic ulcers, sinus tract, fistulas and long standing scars of various aetiologies. As most of these carcinomas are squamous cell types, today the term marjolin's ulcers used for squamous cell carcinoma (SCC) arising on scar tissue. Marjolin's ulcer is slightly different from typical SCC because its edge is not always raised and everted. Marjolin's ulcer is radio resistant as extensive fibrosis makes it relatively less vascular.

In literature the incidence of burn scar carcinoma is stated to be rare, although the exact incidence of malignant degeneration of burn scar is not known. About 1.2 % of all skin cancer cases have been reported to originate in burn scar. Most patients affected belong to low socioeconomic groups and were illiterate. They do not bother for the pre morbid conditions like hypertrophied scar, repeated ulcerations, and contracture, supposed to be hindrance for reducing the incidence of the disease, thus requires educating the patients of burn scar for early recognition of the premorbid conditions, about the disease and timely referral to the centres for proper management.

MATERIAL AND METHODS:

A retrospective study was carried out in the Department of Plastic & Reconstructive surgery of Pt .JNM Medical College, Raipur between October 2005 - October 2008 .Total 50 cases of non healing ulcers suspected for Marjolin's ulcer were picked up randomly for the study from the OPD and were admitted in the ward of Dr BR Ambedkar Memorial Hospital Raipur Chhattisgarh. The demographic profile of the patients was recorded. A detailed clinical examination, measurements, routine investigation and histo-pathological examination was carried out.

Table1. The Case series of Marjolin's ulcers depicting patient's Age, Sex, Occupation, Aetiology, type of malignancy, duration of ulcer and site of ulcer are provided.

S.No.	Age(Years)	Gender	Occupation	Location of Ulcer	Aetiology	Duration Of ulcer	Type of malignancy
1.	66	Male	Farmer	Lower limb	Other	3 Months	Squamous cell carcinoma
2.	18	Female	House maker	Upper limb	Burn	4 Months	Squamous cell carcinoma
3.	62	Male	Retired pensioner	Lower limb	Other	4 Months	Squamous cell carcinoma
4.	20	Male	Labourer	Upper limb	Burn	5 Months	Squamous cell carcinoma
5.	62	Male	Farmer	Lower limb	Other	6 Months	Squamous cell carcinoma
6.	30	Female	House maker	Shoulder	Burn	5 Months	Squamous cell carcinoma
7.	34	Female	Labourer	Upper limb	Burn	6 Months	Squamous cell carcinoma
8.	38	Male	Farmer	Lower limb	Other	12 Months	Squamous cell carcinoma
9.	36	Male	Farmer	Lower limb	Trauma	24 Months	Squamous cell carcinoma
10.	38	Female	Labourer	Lower limb	Burn	8 Months	Squamous cell carcinoma
11.	40	Male	Business man	Lower limb	Other	8 Months	Squamous cell carcinoma
12.	40	Female	Labourer	Hip	Burn	24 Months	Squamous cell carcinoma

13.	46	Male	Farmer	Lower limb	Trauma	60 Months	Squamous cell carcinoma
14.	50	Male	Farmer	Lower limb	Other	5 Months	Squamous cell carcinoma
15.	50	Male	Farmer	Lower limb	Other	5 Months	Squamous cell carcinoma
16.	48	Female	Labourer	Lower limb	Trauma	24 Months	Squamous cell carcinoma
17.	48	Female	Labourer	Lower limb	Trauma	24 Months	Squamous cell carcinoma
18.	60	Male	Farmer	Lower limb	Other	12 Months	Malignant melanoma
19.	58	Male	Farmer	Lower limb	Other	12 Months	Squamous cell carcinoma
20.	60	Female	Labourer	Lower limb	Snake bite	8 Months	Squamous cell carcinoma
21.	58	Female	Labourer	Lower limb	Trauma	36 Months	Malignant melanoma
22.	64	Male	Farmer	Lower limb	Trauma	48 Months	Squamous cell carcinoma

Figure 1. Thirty year old female house maker presented with post burn scar over right shoulder. Duration of ulcer was 5 months. Biopsy suggestive of Squamous cell carcinoma, underwent wide local excision; coverage provided with split thickness skin graft.

Figure 2. Forty years old female labourer presented with post burn scar above hip (Saree Ulcer). Duration of ulcer was 24 months. Biopsy suggestive of Squamous cell carcinoma, underwent wide local excision; cover provided by transposing limberg flap from healthy area.

Figure 3. Thirty eight years old Male farmer presented with post burn scar over thigh. Duration of ulcer was 12 months. Biopsy suggestive of Squamous cell carcinoma, underwent wide local excision cover provided with split thickness skin graft.

RESULTS:

In our study we found the mean age of 47 years. The Male female ratio was 1.4:1.Out of total 50 patients studied. 28 patients (56%) were of benign ulcer and 22 patients (44%) were marjolin's ulcer proved by histopathological examination. The Patient with Squamous cell carcinoma was 20 in number (40%) and of malignant melanoma were 2 in numbers (4%). The average size of the ulcer measured was more than 10cm in diameter. Majority of ulcers were located on the extremities, however other parts of the body was also involved like shoulder and trunk. 40.20% of marjolin's ulcer patient had attended the hospital within 6 month of onset of disease where as 27.27% cases within 1 year and remaining 31.82 % cases were seen within 5 years of onset of disease. The average lapse of 25 months was found between the appearance of persistent ulceration and definitive treatment. Most of the patients affected were farmers and labourers with low socioeconomic status. Most of the cases of marjolin's ulcer presented with an ulcerative growth, while less cases presented as a cauliflower growth. The malignant melanoma showed Nodular pigmented growth. Out of 20 patients of Squamous cell carcinoma regional lymph node enlargement was seen in only 4 and in these 4 patient regional lymph node enlargement subsided after 5 days antibiotic therapy. Eighteen (18) patients out of 22 cases of marjolin's ulcer were undergone wide excision of ulcer with split skin grafting, one (1) patient treated with excision and limberg flap coverage. Three patients required amputation due to deeper extension of the growth. None of the patients was managed by other modalities like radiotherapy and chemotherapy. After one year of follow up 17 patients had healed wound without recurrence. Fourteen patients returned to their previous work.

Discussion: Marjolin's ulcer-a term used to describe a malignancy arising in chronic ulcers of the skin[1,2] scar tissue, and especially burns scars.[3,4,5,6,7] The eponym Marjolin's ulcer was derived from JEAN-NICOLAS MARJOLIN's description in year 1828 of carcinomatous ulcer which originate in degenerating scars[8] Although most cases of marjolin's ulcer are associated with old burn scar, multiple sources have been reported including venous stasis ulcer[9], decubitus ulcer[10,11,12,13,14] ,chronic osteomyelitis sinus[15,16,17],urinary fistula[18], drainage site[19] also have been reported In our study both post burn and post traumatic non-healing scar got 27.27% while other causes dominated the aetiology. As per studies anatomically there is preponderance of carcinoma on the extremities. In our study the maximum incidence of marjolin's ulcer of lower limb 17 patients (77.27%) were similar to that placed by Lawrence 1952.[20] Ten patients of Marjolin's ulcer were farmer, 8 patients were labourer rest were house maker, retired pensioner and businessman. Ackerman & Deiregasto (1984), Belsario (1963) supported occupation of the patients is often referred to as a cause of carcinoma, while in malignant melanoma and Basal cell carcinoma; exposure to ultraviolet rays, has been proved to be important in causative factor to developments of these lesions. In our study mean age for marjolin's ulcer was around 47 years. The average time interval of 25 months was found between the appearance of persistent ulceration and definitive treatment. Twenty patients were suffering from squamous cell carcinoma and two from malignant melanoma as proved by histopathology reports. Out of 20 patients of Squamous cell carcinoma four patients had lymphadenitis which subsided with antibiotics. Treves and pack 1930[21], studied in 1091 patients of Squamous cell carcinoma. Average age was 58 years, only (0.645%) of these were younger than 25 years. The average age of 1374 patients with basal cell carcinoma was 61 years, only > (0.05%) of these patients were younger than 25 years. De Costa reported the occurrence of squamous cell carcinoma in a burn scar in a man, aged only 20 years.[1] Lawrence, in his study of 80 patients who had carcinoma arising in burn scars showed in 1945 that the latent period (Interval between the burn and diagnosis of cancer) decreased with increasing age of the patients. There was a wide variability in observed latent periods, but the mean latent period for those under 5 yrs of age was 38 years, for those in their third decade 25 years, and for those over 30 years of age 20 years.[20]

In our study most patients had diameter of ulcer of about 6 to 10cm (45.45%). Only 5 patients (22.73%) had more than 10 cm and in 7 patients (31.81%) had less than 6cm ulcer size. In the series presented by Lawrence (1952) the average size of ulcers measured was 36 sqcm.[20] This illustrate the late stage to which the disease had progressed before the patients sought aid as does the average lapse of 17 months between the appearance of persistence ulceration and definitive treatment.

According to Eb Copcu , A Aktas 2002[22] standard management of the tumour comprised excision with a 2 cm margin, and the resultant ulcer was grafted or covered by flaps. Indeed, wide excision (surgical margin of at least 2cm.) together with skin grafting is usually

considered appropriate in the treatment of marjolin's ulcer. However, there is no agreement on the indication for lymph node dissection. Most studies have not supported the idea of prophylactic node dissection although Novick et al 1977[23] suggested that prophylactic lymph node dissection should be performed for tumours located on lower extremities.

In our study, out of 22 patients, 19 patients were undergone wide local excision which included most of the scar tissue causing limitation in the joint movement, followed by application of split skin graft or flap cover. Three patients undergone amputation (two legs and one hand) where bone was found invaded by the tumour.

CONCLUSION:

It is important and special need for early detection of pre morbid conditions of Marjolin's ulcer like hypertrophied scar, repeated ulcerations, and contracture by conducting the survey and pin pointing out the candidates and providing prompt treatment to them**.** It can be done by making the effective legislation and launching the welfare program. To create awareness and educate people of the remote places about the disease by utilizing print and media services strategically. To train the local doctors and the paramedical staff for delivering proper early wound care management. Health and social workers should be engaged for arranging regular health camp in the general interest of the populations so that patients can be picked up early and referred timely to tertiary health care centre. This will give the best chance of cure for the disease, will help in reducing morbidity and incidence of the disease and is true for Marjolin's ulcer.

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