Journal Homepage: - www.journalijar.com

INTERNATIONAL JOURNAL OF ADVANCED RESEARCH (IJAR)

Article DOI: 10.21474/IJAR01/16076
DOI URL: http://dx.doi.org/10.21474/IJAR01/16076

RESEARCH ARTICLE

BASAL CELL CARCINOMA OF HEAD AND NECK REGION: AN ANALYSIS OF 120 CASES

Dr. Anil Kumar[1], Dr. Shahnawaz Ahmed Chowdhary[1], Dr. Adil Hafeez Wani[2] and Dr. Haroon Rasheed Zargar[3]

1. Senior Resident Department Of Surgery Gmc Jammu.
2. Professor Plastic Surgery Skims Srinagar.
3. Additional Professor Plastic Surgery Skims Srinagar.

Manuscript Info

Manuscript History
Received: 25 November 2022
Final Accepted: 27 December 2022
Published: January 2023

Abstract

Background: Skin cancer is the most common malignancy and makes upto about one third of all cancers diagnosed. The common skin cancers include nonmelanoma skin cancers and melanoma. The majority of skin cancers of the head and neck are nonmelanoma skin cancers[1]. Out of which BCC is the most common. Basal cell carcinoma accounts for approximately 75% of all cases of nonmelanoma skin cancers. Older age and male sex are associated with higher risk of developing basal cell carcinoma. Basal cell cancer occurs mostly on face , head, scalp, neck and hands.

Aims And Objectives: To analyze the presentations of basal cell carcinoma, different areas involved and treatment modalities.

Material And Method: Retrospective study from January 2008 to May 2013. Prospective study from June 2013 to June 2015. A total of 120 cases were examined. All retrospective record was retrieved from pathology and plastic surgery department and along with new cases were analysed.

Results: A total of 120 cases of BCC were examined out of which 76(64%) were male and44 (36%) were female. Giving male to female ratio of 1.7:1. Cheek (29%) is the most common site involved. Mean age at presentation was 58.7 years and median age was 60 years with a range of 60 years from 25-85 years. Nodular lesion was seen in 46.07 % cases followed by pigmented 18% and superficial lesion in 15% cases.

Conclusion: Basal cell carcinoma is the most common skin cancer of the head and neck region affecting mainly elderly males. Increased incidence is most likely due to the increased ultraviolet radiations, increased outdoor activities, changes in clothing style and ozone depletion. Surgery is the main stay of treatment. Adjuvant treatment is given mostly to stage 3 and stage 4 disease patients and in some patients with positive resection margins.

Introduction:-

Jacob Arthur in Dublin 1827 coined the term rodent ulcer for basal cell carcinoma because of its resemblance of epithelial cells to basal cell of skin. Basal cell carcinoma accounts for approximately 75% of all cases of

Corresponding Author:- Dr. Anil Kumar
Address:- Senior Resident Department Of Surgery Gmc Jammu.

nonmelanoma skin cancers. Older age and male sex are associated with higher risk of developing both basal cell carcinoma and squamous cell carcinoma .

Etiology:
The exact cause of Basal cell carcinoma is unknown, but environmental and genetic factors are believed to predispose patients to basal cell carcinoma. Radiation exposure: Sunlight is frequent association with development of basal cell cancer. The amount and nature of accumulated exposure during childhood is important. A latency period of 20-50 years is typical between the time of ultraviolet damage and basal cell carcinoma onset[2]. Ultraviolet B is believed to play a greater role in the development of basal cell carcinoma than Ultraviolet A . Gene mutations: Recent studies demonstrate a high incidence of TP53 gene mutations in basal cell carcinoma. Genetic involvement has been demonstrated on chromosome 9 only in patients with familial basal cell nevus syndrome. Immunosuppression: An increase in the risk of basal cell carcinoma has been noted in chronically immunosuppressed patients, such as recipients of organ or stem cell transplants and patients with acquired immune deficiency syndrome[3,4]. Xeroderma pigmentosum: This autosomal recessive disease has been found to be associated with basal cell carcinoma[5,6,7,]. Epidermodysplastic verruciformis: Epidermodysplastic verruciformis [6,7] is anautosomal recessive disorder characterized by the development of basal cell carcinoma and squamous cell carcinoma from warts. Nevoid basal cell carcinoma syndrome: In addition to basal cell carcinoma, this is associated with multiple odontogenic keratocysts, palmoplantar pitting, intracranial calcification, and rib anomalies.

Skin type:
Albinism has been implicated in Basal cell carcinoma

Clinicopathologic types of Basal cell carcinoma, each of which has a distinct biologic behavior, include the following:
1. Nodular:It Is the most common (60%) type. It also includes cystic, pigmented and keratotic type.
2. Infiltrative: In this case tumor infiltrates the dermis in thin strands between collagen fibers
3. Micronodular: Appear yellow-white when stretched, is firm to the touch
4. Morpheaform: Appears as a white or yellow, waxy, sclerotic plaque that rarely ulcerates
5. Superficial: Appears clinically as an erythematous, well-circumscribed patch or plaque, often with a whitish scale

The first three of these are mentioned with the greatest frequency accounting for 75% of cases of basal cell carcinoma. It usually remains local and almost never spreads to other parts of the body, but it may continue to grow and invade nearby tissues and structures, including the nerves, bones, and brain. Metastases with basal cell carcinoma are rare, occurring in 0.003–0.05% of patients[8,9].Basal cell carcinoma occurs mostly on the face, head, scalp , neck, and hands. The H-zone (i.e., nasolabial fold, nasal ala, orbital area and auricular area) was found to be the most common site of recurrence in basal cell carcinoma[10]. Basal cell carcinoma growing in the triangle of the face (formed by lines drawn from the outer canthi to the philtrum of the lip) tends to be more invasive, more destructive and more recurrent than that in other sites.

Treatment
Surgical Excision
Surgical resection is the most common and effective method of treatment for skin cancer of the head and neck. The surgeon should keep four goals in mind:
1. Total removal of the tumor.
2. Maximal preservation of normal tissue.
3. Preservation of function.
4. Optimal cosmesis

The larger the amount of clinically normal appearing skin removed, the higher the cure rate. Basal cell carcinoma < 2 cm in diameter are excised with a 4mmmargin of normal appearing skin while basal cell carcinomas with >2 cm in diameter are excised with 10 mm healthy margins[11].

Surgical excision usually produces good to excellent cosmetic results and cure rates as high as 95%. If a positive margin occurs, additional surgery is needed. Recurrance in primary basal cell carcinoma is 5%[12].

Mohs Micrographically Controlled Surgery
Mohs micrographic surgery is indicated for the following tumors:
Tumors with poorly defined clinical borders. Tumors with diameters greater than 1 cm located anywhere on the face. Tumors arising in regions where maximum preservation of uninvolved tissue is desirable, as is a good cosmetic outcome.Mohs micrographically controlled surgery has a cure rate of 99% in case of primary basal cell carcinoma and 90-95% of recurrant basal cell cancers. With this technique, almost 100% of the tissue margins are examined. The 5-year recurrence rates for treated basal cell carcinoma are low.

Radiation therapy:
Radiation therapy is used for the treatment of patients with primary lesions that require difficult or extensive surgery[13]. Cosmetic results are good with a small amount of hypopigmented lesions. It can also be used for recurrant disease.

Electrodesiccation and Curettage
Electrodesiccation and curettage is also a method for the treatment of primary basal cell carcinomas. It quickly destroy tumor cells. Electrodesiccation and curettage is a short procedure (< 5 min) and is effective in treating nodular and superficial basal cell cancers.

Curettage With Er:YAG Laser Ablation
In this tumor is scraped using a curette followed by laser ablation of the ulcer. This is often repeated 2 more times. Curettage with Er:YAG laser ablation is brief (< 5min), is effective in treating primary nodular and superficial BCC and has a better cosmetic outcome.

Cryosurgery, immunocryosurgery and photodynamic therapy[14] has also been used in the treatment of basal cell carcinomas.

Material And Methods:-

Study Design:
Retrospective study from January 2008 to May 2013.Prospective study from June 2013 to June 2015.

Study Settings:
Department of Plastic, Reconstructive and Microvascular Surgery Srinagar

Study Population:
Patients with head and neck basal cell cancers.

Study Area:
Sher-i-Kashmir Institute of Medical Sciences, Srinagar

Results:-

A total of 120 cases of BCC were examined out of which (76) 63.3% were male and (44) 36.66% were female. In our study male to female ratio was 1.7:1 [FIGURE 1]. Cheek (35) 29.1% is the most common site followed by nose (30) 25% and eyelid and canthal region (27) 22.5%. Ear and scalp contribute (11) 9.1% and (6) 5% [FIGURE 2]. Nodular lesion was seen in (65) 54.1 % cases followed by pigmented (22) 18.3% and superficial in (18) 15% [FIGURE 3]. About 68 patients fell in the age group of 40-70 years thus showing that the middle age group had maximum involvement. Mean age at presentation was 58.7 years and median age was 60 years with a range of 60 years from 25-85 years. Primary closure of wound after excision of lesion was possible in 38% patients while rest of patients needed cover by flaps and grafts. WLE with local flap done in (38) 31.6% cases, split thickness skin graft (SSG) in 18% and full thickness graft (FTG) in 9% of cases. Complications in the form of infection, graft loss and partial flap necrosis were encountered in 9 (7.5%) patients. Out of 120 operated patients 8 patients had positive resection margins.

Discussion:-

The incidence of skin cancers has increased worldwide over the last decade due to extended life span and social and medical changes. The rising incidence rate is most likely due to a combination of increased ultraviolet radiation,

increased outdoor activities, changes in clothing style and ozone depletion. Total number of patients in our study were 120. Out of 120 patients there were 76 males (63.33%) and 44 females (36.66%). Male to female ratio in our study was 1.7:1. Janjua et al[15] reported male to female ratio of 1.4:1 among head and neck basal cell cancers. Asif et al[16] reported a male to female ratio of 1.2:1. Male to female ratio of 1.6:1 was reported by Malhotra et al. Ozan LA[17] in his study reported a male to female ratio of 1.67:1. Nodular lesion was the most common presentation seen in 65 (54.1%) patients followed by pigmented lesion in 22 (18.3%) and superficial lesion in 18(15%). Chang et al[18] in their series of 243 patients reported nodular lesion in53.9% followed by superficial in 18.9% and infiltrative in 18.5%. Janjua et al[16] in their series of 171 patients reported nodular lesion as the most common presentation in 46.2% cases. The most common site involved in head and neck area was cheek seen in 35 (29.1%) , followed by nose in 30 (25%) patients. Eyelid and canthal area involved in 27 (22.5%) cases, ear and scalp contributed to 11 (9.16%) and 6 (5%) of all head and neck skin cancers cases. Kim HR et al1[19] reported that basal cell cancer most commonly occurred on cheek. Kim YP et al[20] reported nose as the most common site for basal cell carcinomas. Primary closure could be achieved in 38 % patients while as30%patients needed cover by local flaps. In 27% patients the defect was covered by various types of grafts. Routine complications in the form of infection, graft loss and partial flap loss were seen in 9 (7.5%) patients. These complications occur very commonly and were seen in other series also. Positive resection margins were seen in 8 (6.66%) patients. Velda LYC et al[21]reported a positive margins in (15.4%) patients in his series of 225. Talbot et al[22]reported positive margins in 14% of patients in a series of 1833 patients operated for nonmelanoma skin cancers. The similarity in a small percentage of positive resection margins can be attributed to the fact that sometimes on an area like face the surgeon tries to be abit conservative while dissection.

Figure 1:-

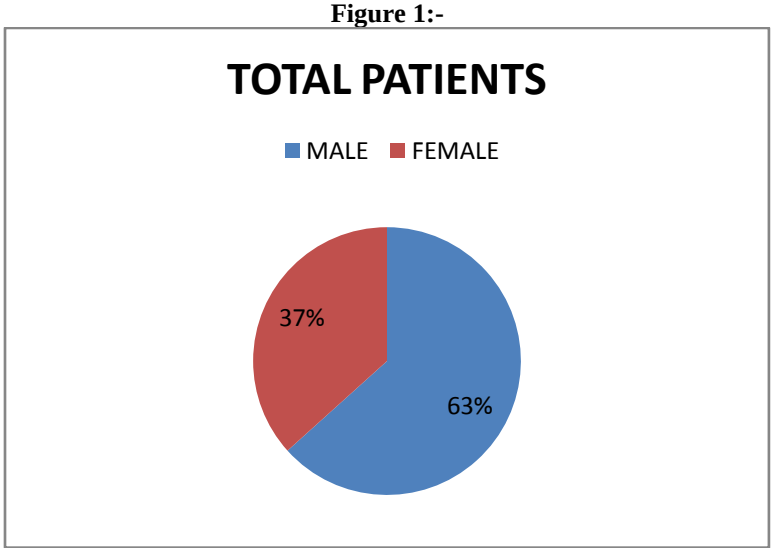

Figure 2:-

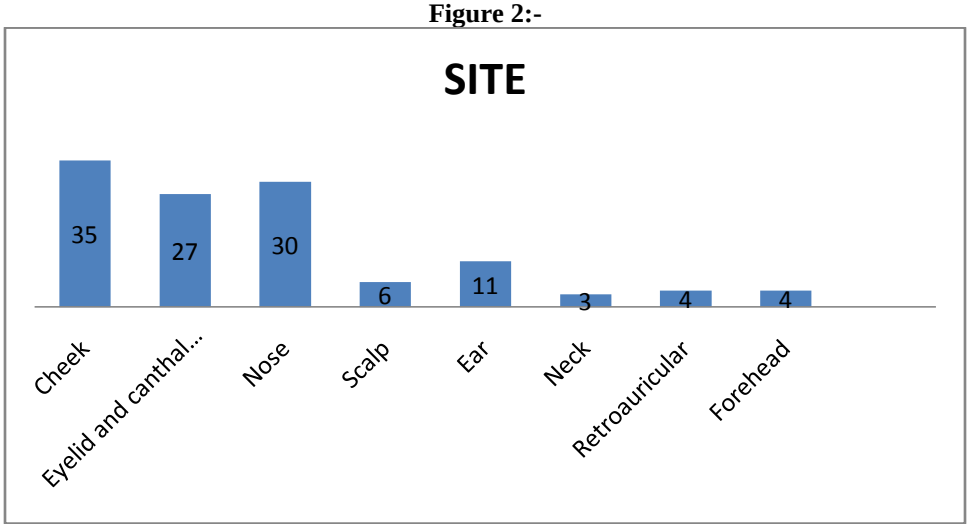

Figure 3:-

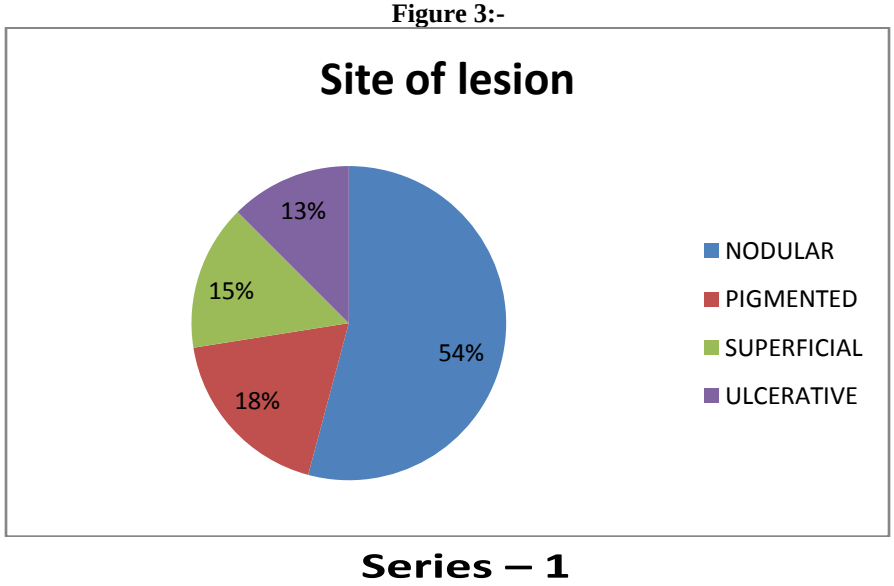

Figure 1 : Middle aged female presenting with basal cell carcinoma dorsum of nose (edge biopsy proven).

Figure 2 : Marked area for excision.

Figure 3 : Wide local excision of the basal cell carcinoma done.

Figure 4 : Full thickness graft harvested from retroauricular area used to cover the defect.

Series 2:-

Figure 1:- Pigmented basal cell carcinoma involving upper lip and right commissure in an elderly male.

Figure 2:- After wide local excision and reconstruction with Abbe-Estlander flap.

Figure 3:- Late postoperative photograph showing well reconstructed upper lip and commissure.

Series 3:-

Figure 1 : Middle aged female with basal cell carcinoma left lower eyelid, medial canthal area and infraorbital cheek.

Figure 2 : After marking for the excision and paramedian forehead flap based on contralateral supratrochlear vessel.

Figure 3:- Wide local excision of tumor along with elevation of contralateral forehead flap. Chondromucosal graft from nose used to form lining for left lower eyelid.

Figure 4:- Intraoperative photograph showing closure of defect and reconstruction of lower eyelid.

Conclusion:-

Basal cell carcinoma is the most common skin cancer of the head and neck region affecting mainly elderly males. Increased incidence is most likely due to the increased ultraviolet radiations, increased outdoor activities, changes in clothing style and ozone depletion. Surgery is the main stay of treatment. Adjuvant radiotherapy is given mostly to stage 3 and stage 4 disease patients and in some patients with positive resection margins.

Bibiliography:-

1. Marks R. An overview of skin cancers. Incidence and causation.Cancer1995;75bn (2 Suppl):607–612.
2. Armstrong BK, Kricker A. The epidemiology of UV induced skin cancer.JPhotochemPhotobiol B 2001;63(1-3):8-18.
3. Gourin CG, Terris DJ. Head and neck cancer in transplant recipients.CurrOpinOtolaryngol Head Neck Surg 2004;12:122–126.
4. Padgett JK, Hendrix JD Jr. Cutaneous malignancies and their management.OtolaryngolClin North Am 2001;34:523–553.
5. Levi F, La Vecchia C, Te V-C, et al. Descriptive epidemiology of skincancer in the Swiss Canton of Vaud. Int J Cancer 1988;42:811-6.
6. Leman JA,McHenry PM. Basal Cell Carcinoma still an enigma. ArchDermatol 2001;137:1239-40.
7. Bastiaens MT, Hoefnagel JJ, Bruijn JA, et al. Differences in age, sitedistribution, and sex between nodular and superficial basal cell carcinomaindicate different types of tumors. J Invest Dermatol 1998;110(6):880-4.
8. Quyang Yun-Hsuan . Skin cancers of head and neck ;seminplastsurg 2010;117-226.
9. Miller SJ. Biology of basal cell carcinoma (Part I) J Am AcadDermatol. 1991;24:1-13
10. Kim JW, Oh CH, Kim IH. Distribution of histologic subtypes of basal cellcarcinoma by facial aesthetic unit and subunit. Korean J Dermatol. 2000;38:31–37.
11. Wolf DJ, ZitteliJA : Surgical margins for basal cell carcinoma. ArchDermatol 1987; 123: 340-344.
12. Hauben DJ, Zirkin H, Mahler D, Sachs M: The biological behavior ofbasal cell carcinoma: analysis of recurrence in basal cell carcinoma. Part 2.PlastReconstrSurg 1982; 62: 110-116.
13. Caccialanza M, Piccinno R, Moretti D, et al.: Radiotherapy of carcinomasof the skin overlying the cartilage of the nose: results in 405 lesions. Eur JDermatol 13 (5): 462-5.
14. Arits AH, Mosterd K, Essers BA, Spoorenberg E, Sommer A, De RooijMJ, et al. Photodynamic therapy versus topical imiquimod versus topicalfluorouracil for treatment of superficial basal-cell carcinoma: a singleblind, non-inferiority, randomised controlled trial. Lancet Oncol. Jun2013;14(7):647-54.
15. Janjua O. S., Qureshi S. M. Basal cell carcinoma of the head and neckregion: an analysis of 171 cases.Journal of SkinCancer. 2012;2012 .Article ID 943472.
16. Asif M., Mamoon N., Ali Z., Akhtar F. Epidemiological and excisionmargin status of basal cell carcinoma—three years armed forces institute ofpathology experience in pakistan. Asian Pacific Journal of CancerPrevention. 2010;11(5):1421–1423.
17. Ozan LA, Huseyin B, Basal cell carcinoma: A single centreexperience.ISRN
18. Chang ,Gao X. Clinical and histopathological characteristics of basal cellcarcinoma in Chinese patients. Chinese MedicalJournal. 2013;126(2):211–214. Dermatol. 2012; 2012: 246542.
19. Kim HR,Na CH, Shin BS et al. A statistical study of cutaneous basal cellcarcinoma and squamous cell carcinoma in Gwangju city and ChonnamProvince92006-2010) Korean J Dermatol.2011;49: 1073-1078.
20. Kim YP, Chun IK. Lee HH. A 10 year period 91968-1977) of clinicalobservation of cutaneous malignant tumors. Korean J Dermatol.1978;16:19-29.
21. Velda LYC, Jimmy YWC etal. Basal cell carcinoma of head and neckregion in ethnic Chinese .Int J Surg oncol:2011;2011:890908.
22. Talbot S, Hitchcock B. Incomplete primary excision of cutaneous basaland squamous cell carcinomas in the Bay of Plenty. N Z Med J. 2004 Apr23;117(1192):U848.