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Dermatology Research

Skin Tumors

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Introduction
In this paper we will talk about the most common skin tumors such as benign, premalignant and malignant. Among the pathologies that are considered benign we have common warts, solar keratosis and senile hyperkeratosis. These entities, although they tend to be annoying for the patient from an aesthetic or appearance point of view, do not medically represent any danger to the individual who suffers from them.

Common warts appear most frequently in places of bending or rubbing, face, hands, legs, soles of the feet and body. Classified into plants, pedunculated and acuminate, they tend to grow quickly and increase rapidly in number, so it is advisable to treat them as soon as possible.

There are various treatments to control these entities, we have cryogenic agents such as carbonic snow, nitrous oxide and liquid nitrogen which allow us to remove the injury through a cold burn, which must be applied weekly until its complete disappearance. Various topical preparations have been used such as salicylic acid and podophyllin, however both commercial products produce a significant burn at the edge of the lesion. We have seen repeatedly that when the wart or keratosis is large, these products do not penetrate the deep layers of the dermis, causing a residual.

On the other hand, we have electrofulguration, which will allow us to burn the injury using a device called electrofulguration, which emits low-frequency electric current through a pencil that has a Teflon conductor at the tip. Another procedure is CO_2 laser that burn these lesions in one session. The advantage of this procedure is that in a single session all warts can be removed.

Regarding senile hyperkeratosis and seborrheic keratoses, it is worth mentioning that although they are similar entities, the difference between them is that the former appear after the age of 50 and the latter in young adulthood, being caused by excess of fat in the skin. The ideal treatment for both entities is through the cryogenic agents, laser, IPL and astringent lotions can be used if the case warrants it. Other benign entities whose treatment is exclusively surgical are cutaneous cysts, pyogenic granulosa, fibrous and diplomas.

Material and Method
Premalignant lesions
Among the premalignant lesions we find Bowen's disease, actinic keratoses, cutaneous horns, Queirat's erythroplasia, Jadasson's intraepithelial epithelioma, chronic radiation dermatitis, leukoplasias, albinism, Gardner's pre-cancerous syndrome, Benign skin tumors, Keloid scars, etc.

There are other types of lesions of melanin and vascular origin which various authors classify as pre-malignant due to the ease with which they can change histologically and produce malignant cells, among them we find the new intradermal, new compound or mixed, new union, blue nevus, hemangiomas, angiomas, lymphangiomas, etc. In this paper we will focus more insistently on Basal Cell Epitheliomas due to the frequency with which they occur.

Among the factors that favor the formation of skin tumors, and the malignancy of the lesions are sun exposure in both tropical and dry climates, white skin, heredity, genetic information, exposure to ultraviolet rays, traumatized skin (accidents or burns), exposure to x-rays or exposure to carcinogens (arsenic).

Basal Cellular Epithelioma was described by Jacob in 1827, mentioning that it can be in any part of the body, in patients with

white skin and who are genetically predisposed. With the years and deep study on Fitzpatrick skin tones that seams that this lesion can appear in almost skin tones. Histologically, the origin of these lesions is undifferentiated cells from the basal layer of the skin or its annexes. They have not been found in the basal part of the anal and vaginal mucosa. This lesion appears as a shiny, waxy modular formation, with some Telangiectasias around it and which, as it grows, can become depressed or raised in the central part. Its edges resemble a rosette of peeling formations that sometimes turn blackish in color. These lesions have the characteristic of bleeding easily when the scab is removed, spreading in its central part, healing spontaneously.

The regions where benign skin tumors occur most frequently are:

1. The nose 2.38 %
2. Ears 1.43 %
3. Eyelids 1.17 %
4. Cheeks 1.04 %
5. Lips 0.96 %
6. Neck & head 0.55 %
7. Trunk 0.22 %

These values are approximate.

Epitheliomas are divided into well-differentiated or undifferentiated tumors. In the first case, they will be called cystic adenoids when they form islands of cells and mucin cavities, located in tissue of sebaceous structures. Undifferentiated ones are called solid basal carcinoma, and these are the most common.

Abulafia Classification

1. Superficial or pagetoid plane, extends towards the periphery.
2. Lobed, covers the dermis and upper hypodermis.
3. Cordoned, in the superficial plane there are stellate cords, and it affects the dermis and runs towards the surface.
4. Scleroderma, forms plaques.
5. Infiltrating adenoid invades the deep hypodermis and sometimes reaches the muscle and bone.
6. Fibroepithelial of Pincus, is a basal cell epithelioma with fibrous hyperplasia, it is not very aggressive and is subdivided into type 1 and 2.

Treatment

There are different treatments to cure Basal Cell Epitheliomas, however we believe that it is very important to consider the location and characteristics of the tumor, age of the patient, time of evolution, etc. since it is common to find residuals due to the poor choice of treatment or even on occasions that it was insufficient.

Some authors mention that because basal cell epithelioma is very difficult to become malignant, a biopsy of the lesion can be performed, which must include both healthy and affected tissue so that the pathologist can carry out the corresponding study on the biopsied sample. It is preferable to perform a complete resection of the lesion in the first surgical stage because it is easy to clinically confuse a basal cell tumor with a squamous cell tumor, perhaps it is malignant.

In the seventies it became fashionable to remove most of these injuries by means of brokerage and electrofulguration. The technique consisted of removing the lesion by fixing the sample obtained on an object slide for subsequent study in the laboratory. The surgical bed was sealed by burning with electric current (electrofulguration).

However, this technique has the drawback that at the base of the lesion there were pre-cancerous cells that in many cases and over time recur. Because of this, we do not recommend electrofulguration, shaving, IPL and laser to remove suspicious lesions or where there is doubt regarding their physical and clinical characteristics.

Another of the frequently used treatments is cryotherapy, which in the eighties was used with great enthusiasm for the treatment of basal cell epitheliomas and other skin lesions. This methodology has similar limitations to the previous technique since even with the use of special thermometers to measure the cold reached in the depth of the tumor, the report of reactivation of Epitheliomas is important. This is due to the doctor's inexperience to apply radiotherapy and achieve the necessary cold and burn in the area to be treated and to be sure that there will be no growth in the future. As with electrofulguration, IPL, shaving and laser we must be clinically sure of what skin lesion we are treating so as not to have surprises later.

Regarding radiotherapy and chemotherapy, both have advantages and disadvantages, the first is very aggressive to treat benign skin tumors and the residual cosmetic and physical consequences are important, so we choose to use a safer method. and less bloody. In the case of chemotherapy, there are products such as 5-fluoroacylium among others, which are applied topically and allow the lesion to be removed in a few weeks with a safety margin of almost 100%.

In our opinion, the ideal treatment to remove basal cell epitheliomas is complete resection of the lesion and subsequent pathological study to determine if the tumor was completely removed, both in its lateral and deep edges.

There are two ways to perform the procedure, one is the Mohs technique, which performs cold fixation and direct intraoperative study of the tumor to determine if it has been completely removed and there are no cords or active cells left on some of the surgical edges. The other technique is that once the tumor has been removed, it is placed in a bottle with formaldehyde and sent to the pathologist for postoperative study, and the characteristics of the sample and whether the surgical limits are free of lesions must be reported.

Both surgical beds are closed directly and cosmetically. The curative resection of Basal Cell Epithelioma must be carried out leaving a safety margin of 3 to 5 mm from the edge of the lesion, so that the possibility of residuum does not arise.

Basocellular or Nevicocellular Epitheliomas Syndrome

This is a rare familial disorder where multiple basal cell carcinomas develop in sun-exposed areas, such as the nose, nasolabial fold, eyelids, cheeks, arms and trunk. It is a condition that is determined by an autosomal dominant gene, so we must consider for its diagnosis if there is a history in the patient or family of having suffered from basal cell carcinomas, palmar fissures or dentigerous cysts.

Usually, this condition begins in childhood and puberty, communicating throughout the patient's life. Due to the significant multiplicity of the tumor, the treatment tends to become difficult to control since the tumors must periodically be surgically removed.

Some authors have described that this type of lesion can be associated with other conditions such as hyperparathyroidism, shortening of the fourth methacrylate, bifid and fused ribs, ovarian cysts, calcification of soft tissues, fibrous tissues, neurons and meningiomas among others.

It is important to mention that the prognosis of these patients depends on the promptness with which they are treated and, above all, the fact of avoiding exposure to sunlight.

Surgical treatment in this type of condition should be considered as an initial trial. However, due to the rapidity with which these lesions are generated, it can be combined with chemotherapy, considering the topical agents described above and cryosurgery, reaching adequate freezing levels. to avoid residing in the affected areas.

Spinocellular Epithelioma

It appears as an ulcerated dermal lesion, with thick edges like a cauliflower where in many cases there is a bad odor due to the added infectious process and tumor necrosis due to the lack of irrigation in the area.

At the site of the tumor there is almost always a history of having existed a pre-cancerous lesion such as solar dermatitis, senile keratosis, hypertrophic and keloid scars, cheilitis, radio dystrophies, etc.

Histologically, squamous cell epitheliomas present large, well-differentiated cells with vesicular nuclei where cytoplasm abounds, and the formation of intercellular bridges occurs. As they become more dysplastic or differentiated, keratin production decreases and atypical mycosis increases, increasing its malignancy capacity.

Classification

1. **Grade 1:** There is no invasion beyond the depth of the sebaceous glands.
2. **Grade 2:** Small pearl shapes are found that go deep into the keratin.
3. **Grade 3:** Keratinization is not appreciated, there is an increase in atypical mitosis which prevents distinguishing the neighboring stroma. It is very invasive.
4. **Grade 4:** We find long fusiform cells, complete absence of keratin, they are abnormal cells and without bridges.

They can be confused with melanomas or sarcomas and require special staining techniques to be detected.

The evolution and prognosis of patients who suffer from this type of tumor depends on the location and degree of malignancy, and it is important to discover if there are carcinogenic factors in squamous cell epithelioma, especially if it is found in the mucous membranes.

Biopsy, palpation, inspection and specialized examination of the cavities are useful to determine the prognosis and evolution of the patient. Because this type of tumor is invasive, we must look for symptoms of cranial nerve involvement, repeated sinus infections and fistulas, obstruction of the digestive area, pain and spontaneous bleeding in the patient. Carry out a thorough radiographic study which allows us to rule out bone invasion, and confirm that there are no metastases in the lung, bone, brain, liver, etc.

If the tumor was not treated properly and completely removed at an early stage, there is a possibility of recurrence. Because of this, it is important to determine the precise location of the initial appearance of the tumor since tumor reactivation is usually more aggressive. The most problematic anatomical areas are the nose, mouth, ear canals and nasolabial folds. This is because the tumor sends cellular cords through the connective tissue, infiltrating the fat more quickly, taking the arterial, venous and nerve vessels as a vehicle, deeply invading the periphery and orifices.

Treatment

The ideal treatment for squamous cell epithelioma is radical surgical resection. It must be carried out with a safety margin of 1 to 1.5 cm. From the edge of the lesion, a trans operative anatomopathological study can be carried out pro-freezing. It is very important to perform a complete physical examination of the patient to rule out the presence of lymphadenopathy.

These types of tumors have been shown to respond poorly to treatment based on radiotherapy and are considered radio-resistant, so the use of this methodology is not recommended. Referring to chemotherapy, we must specify that there are systemic and local treatments such as actinomycin D, Adriamycin, bleomycin, 5-fluoroacyl and methotrexate. These products allow us to cure a high percentage of this type of tumors in an early stage, however they have the drawback. that when the tumor has invaded the deep layers of the skin the result is not the same.

In recent years, immunotherapy has become popular for the control of neoplasms, proving to be an excellent method to improve the immune system of the individual without achieving tumor remission.

Melanomas

Malignant melanoma is a tumor that continues to be a challenge for medicine given its capricious or unexpected behavior. It originates from melanin-producing cells which are born in the central nervous system, in the area called neural crest, from where they migrate in a cephalocaudal and dorsoventral direction to accumulate in the skin by means of neuroblasts and Melano blasts, from which nevocytes arise and melanocytes respectively.

From the nevocytes, all nevi will be generated, including the so-called juvenile melanoma (non-malignant), and from the melanocytes, the blue nevus (dermal melanocytes), malignant lentigo and malignant melanoma originate, which can appear on healthy skin. There are different types of melanomas classified according to their own characteristics.

Firstly, we have superficial melanoma, which grows on healthy skin, has an irregular shape and can be flat with an erythematous edge that is generally purplish, blue or black. This lesion may have a warty or nodular appearance.

Infiltrative melanoma, this entity has the characteristic of rapid growth up to several centimeters, it is brown, black or white in color. The surface is shiny, ulcerates easily and bleeds frequently. An important clinical fact is that melanomas do not have hairs due to the destruction of hair follicles. Its most frequent location is the head, soles of the feet, fingers, nails, upper and lower limbs, and thorax.

In some cases, melanomas can grow on another skin lesion, such as lentigo malign or Dubreuilh melanoma. It is made up of a plaque several centimeters in diameter with bluish-black nodules and with some raised points where malignancy is considered to have begun. They usually grow near the eye socket, nose, and cheeks, presenting a blackish brown color.

Acral lentiginous melanoma. It frequently occurs in the junctions of the skin and mucous membranes, such as the mouth, palate and genital region. It has also been found in the palms of the hands and soles of the feet, especially in the nail beds. Its histological characteristics are like those described above; however, this entity is the most aggressive.

Histology

In superficial or in situ melanoma, the cells have a large amount of melanin, with atypical nuclei or vacuoles. It is intradermal and corresponds to Clark's level one.

In invasive melanoma we find fusiform cuboidal cells with atypical predominance that invade both the dermis and the epidermis. Depending on the degree of differentiation of the tumor, its location (lip, tongue, genitals, margin of the anus, etc.) and the existence of lymphadenopathy, lymph node dissection is recommended. Considering the CLARK levels and Breslow thickness reported in the anatomopathological study.

Clark Levels

Without lymph node emptying:
Level 1.- Intraepidermal
Level 2.- Papillary dermis, with lymph node emptying
Level 3.- Between the papillary dermis and the reticulum
Level 4.- Dermis reticular
Level 5.- Hypoderm

Breslow Thickness

Without emptying: Up to 0.75m m. (unable to metastasize), Between 0.75 mm and 1.5
With emptying: Between 1.5 mm and 3, More than 3 metastasize.

During the study of the patient, it is important to look for melanuric, perform a chest x-ray to rule out lung metastasis, study liver function and, in cases of suspected metastasis, a computerized axial topography.

It should be mentioned that the patient's prognosis will depend on the location, surface invasion and depth of the tumor. To the same extent, the presence of distant metastases, the existence of peripheral implants and the type of neoplasia reported in the anatomo clinical study intervene in the patient's survival time. Other important factors are age, sex, time of evolution, instance of onset, pregnancy and general illnesses.

Treatment

The treatment of melanoma is always surgical, requiring a wide resection with a safety margin of 5 to 10 cm. in diameter and up to the aponeurosis. Radiotherapy is not recommended because these tumors are radioresistant. Immunological and chemotherapy treatments so far do not ensure complete eradication of the tumor.

Conclusion

In summary it is very important that all skin lesions described before must be checked and study by an expert physician including anatomy pathological studies, x-ray, MRI, photography, etc. Including a doble check evaluation for other specialist if there is any doubt.

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