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Review Article

A Review on Rosacea

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Abstract
Rosacea is a chronic inflammatory condition of the facial skin affecting the blood vessels and pilosebaceous units. Rosacea is more common in persons of northern and western European descent with a fair complexion, but it can affect skin of any color. Although symptoms may wax and wane during the short term, rosacea can progress with time. Patients usually present with complaints of flushing and blushing and sensitive skin, and their skin may be especially irritated by topical preparations. Rosacea has a variety of triggers; however, they may be unnoticed by the patient. Standard treatments approved by the FDA include azelaic acid, topical metronidazole, and oral tetracyclines, in particular minocycline and doxycycline. Other topical treatments include topical clindamycin, Sub antimicrobial-dose doxycycline, and sulfur products. Azithromycin and controlled-release minocycline are possible options for treating rosacea, but the FDA has not approved either agent for this indication.

Keywords: Rosacea, chronic condition, swollen bumps, skin condition, facial redness.

Article Info

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1. Introduction

Rosacea [roe-ZAY-SHE–Uh] is a common skin condition that causes redness in your face and often produces small red pus-filled bumps. Although rosacea can occur in any one it most commonly affects middle aged women who have fair skin. Rosacea is a chronic inflammatory skin condition that affects approximately 16million Americans rosacea in 18th century.Four distinct subtypes of rosacea have been recognized, with transient and non-transient facial flushing, telangiectasia, and inflammatory papules and pustules being among the more commonly recognized featuresa. Left untreated rosacea tends to worsen over time. Rosacea signs and symptoms may flare up for period of weeks to months and then diminish before flaring up again. Rosacea can be mistaken for acne, an allergic

reaction or other skin problems. While there is no cure for rosacea treatment can be control and reduce the symptoms of rosacea. if you experience persistent redness of your face, see your doctor for diagnosis and proper treatment.

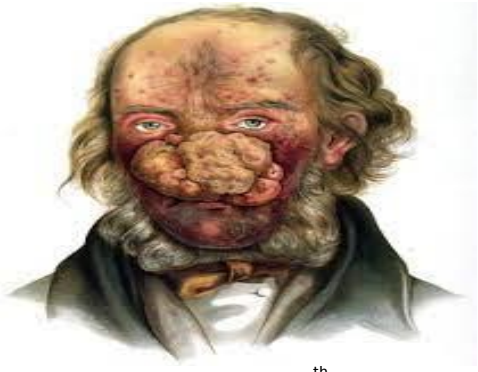

Fig no: 01 Rosacea in 18th century

In 2002, the National Rosacea Society Expert Committee developed a classification system for rosacea to help standardize its diagnosis amongst clinicians and researchers. The committee divided rosacea's diagnostic criteria into primary and secondary characteristics

History

Around 150 years after Chaucer's "The Canterbury Tales", Antoine Muret's epigram entitled "De Pompiliinaso", comically alludes to rhinophyma in an exaggerated reference to Pompilius's nose as a magnetic draw for wine. Displayed in the Louvre, Paris, the much-celebrated painting "The Old Man and his Grandson", Ghirlandajo (1449-1494) clearly depicts the condition rhinophyma in his portrait of the old man. Ghirlandaio painting depicting skin damage from rosacea the first individual known to describe rosacea as a medical condition was a French surgeon, Dr Guy de Chauliac, who referred to the characteristic red lesions he observed across the faces of some patients in the 14th century. In the 18th century, the dermatologist J. J. Planck suggested that alcohol consumption might not be the only cause of rosacea, and referred to cases of rosacea that he claimed to have cured by in fact encouraging patients to drink wine. The French and Latin terms "goutte rose" and "guttarosa" became replaced by the term "acne rosacea" in English medical texts at the beginning of the nineteenth century. The word "acne", however, became discarded by physicians towards the end of the century due to a lack of evidence of a relationship between acne and rosacea

Rosacea in 19th century

Signs and symptoms of rosacea

- **Facial blushing or flushing:** Rosacea can cause a persistent blushing or flushing in the central part of your face. This sign of the condition may be difficult to see on brown and Black skin.
- **Visible veins:** Small blood vessels of your nose and cheeks break and become visible (spider veins).
- **Swollen bumps:** Many people with rosacea also develop pimples on their face that resemble acne. These bumps sometimes contain pus.
- **Burning sensation:** The skin of the affected area may feel hot and tender.
- **Eye problems:** Many people with rosacea also experience dry, irritated, swollen eyes and eyelids. This is known as ocular rosacea. In some people, the eye symptoms precede the skin symptoms.
- **Enlarged nose:** Over time, rosacea can thicken the skin on the nose, causing the nose to appear bulbous (rhinophyma). This occurs more often in men than in women.

Fig no: 02 rosacea in 19th century

Flare-ups might be triggered by:

- Hot drinks and spicy foods
- Red wine and other alcoholic beverages
- Drugs that dilate blood vessels, including some blood pressure medications
- Some cosmetic, skin or hair care products

Rosacea causes more than a red face. There are many signs (what you can see) and symptoms (what a person feels) of rosacea.

Subtype 1: Facial redness, flushing, visible blood vessels

Signs and symptoms

- Flushing and redness in the center of the face
- Visible broken blood vessels (spider veins)
- Dry skin, roughness or scaling
- Have a tendency to flush or blush more easily than other people

Fig no: 03 Type 1 facial redness

Acne rosacea: This subtype of rosacea is most common in middle-aged women.

Subtype 2: Acne-like breakouts

Signs and symptoms

- Acne-like breakouts, usually where the skin is very red
- Skin may be very sensitive
- Skin may burn and sting
- Visible broken blood vessels (spider veins)
- Raised patches of skin called plaques
- Subtype 3: Thickening skin

Signs and symptoms

Fig no: 04 thickening of skin in rosacea

- Rhinophyma: Although rare, rosacea can cause the skin to thicken and have a bumpy texture. When this happens, it is called rhinophyma. Bumpy texture to the skin
- Skin begins to thicken, especially common on the nose. When the skin thickens on the nose, it is called rhinophyma (rye-NO-fie-ma)
- Pores look large
- Oily skin

Subtype 4: In the eyes

Signs and symptoms

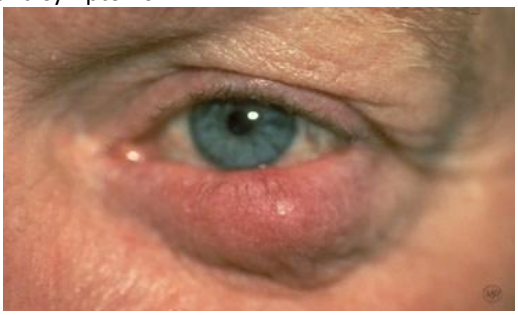

Fig no: 05 rosacea in eyes

Ocular rosacea:

When rosacea affects the eye, it is called ocular rosacea. If rosacea affects your eye, you may need to see an ophthalmologist (doctor who specializes in treating eye diseases):

- Watery or bloodshot appearance
- Feel gritty, often feels like sand in the eyes
- Eyes burn or sting
- Eyes are very dry
- Eyes itch
- Eyes sensitive to light
- Blurry vision
- Visible broken blood vessels on an eyelid
- Cyst on the eyelid
- Person cannot see as well as before
- Rosacea can affect quality of life

Rosacea can affect more than the skin and eyes. Because rosacea is a chronic (long-lasting) skin disease, it can reduce a person's quality of life. Many people report problems at work, in their marriage, and with meeting new people. Surveys and studies report that living with rosacea can cause: Feelings of frustration and embarrassment: In surveys conducted by the National Rosacea Society, 41 percent said their rosacea caused them to avoid public contact or cancel social engagements

Worry:

People worry that their rosacea will get worse or cause scars. People worry about side effects from medicine used to treat rosacea.

Low self-esteem: Surveys conducted by the National Rosacea Society found that almost 70 percent of people living with rosacea said that the condition lowered their self-confidence and self-esteem.

Work-related problems:

Surveys conducted by the National Rosacea Society find that when rosacea is severe, 70 percent of people say the disease affects their interactions at work. Nearly 30 percent say that rosacea causes them to miss work. Anxiety and depression: Living with a skin condition that flares unexpectedly can cause people to believe you have a drinking problem. This can cause anxiety and depression

Types of Rosacea

Rosacea is a chronic condition characterized by a redness of the skin that resembles sunburn. Redness caused by rosacea often comes and goes at first but over time becomes lasting. There are four types of rosacea, though many people experience symptoms of more than one type.

1. Erythematotelangiectatic Rosacea
2. Papulopustular Rosacea
3. Rhinophyma Rosacea
4. Ocular Rosacea

2. Pathophysiology

The exact pathogenesis of rosacea remains unclear. Although the higher incidence of rosacea in individuals of Celtic and Northern European descent suggests that there may be a genetic component to the disorder, genomic association studies have failed to identify a causative gene. Instead, rosacea patients have an increased expression of a variety of genes with roles in both the innate and adaptive immune systems. These results are consistent with findings in the laboratory.

Microorganisms

Demodexfolliculorum and Staphylococcus epidermidis may contribute to rosacea's pathophysiology by stimulating Toll-like receptor 2. Helicobacter pylori's contribution to rosacea symptoms are unclear, but are suggested by the high prevalence of H pylori seropositivity in the rosacea population, including a high prevalence of virulent strains of this bacterium.

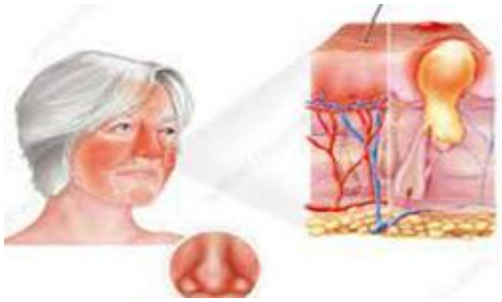

Fig no:6 effect of skin

Ultraviolet light radiation

Ultraviolet light radiation increases reactive oxygen species in the skin, which can signal through Toll-like receptor 2 to propagate the kallikrein 5–cathelicidin inflammatory cascade. UV radiation is a known trigger of flushing and can worsen the symptoms of rosacea. The presence of solar elastosis on skin biopsy specimens obtained from patients with rosacea and the high prevalence of rosacea among individuals with fair skin also suggest a role for UV radiation in the pathogenesis of rosacea;

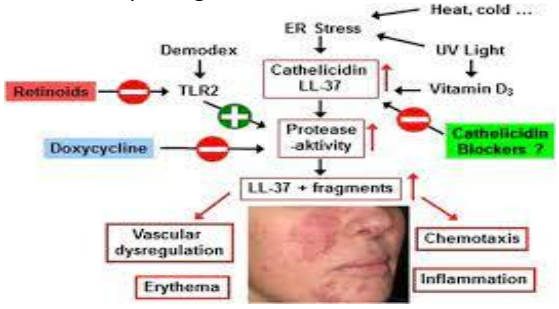

Fig: no.7: Pathophysiology of rosacea

Neurogenic dysregulation

Four vanilloid receptors and one ankyrin receptor within the transient receptor potential family of cation channels have been shown to be active in rosacea. Although signaling pathways of these receptors are not completely understood, these receptors can be activated by stimuli, such as heat and inflammation. In turn, they may contribute to rosacea symptoms, such as flushing and burning. The fact that many of rosacea's triggers, including temperature changes and spicy food, activate sensory nerves

Risk factors

To date, no specific risk factors have been associated with rosacea. Given that vascular dysregulation has been recognized in the pathophysiology of rosacea, several studies have investigated a potential relationship between rosacea and other conditions in which vascular dysregulation is known to occur. For example, a recent case control study of subjects who suffer from migraines found that women >50 years of age who had migraines had a slightly increased

3. Clinical Significance

This generalized information is a limited summary of diagnosis, treatment, and/or medication information. It is not meant to be comprehensive and should be used as a tool to help the user understand and/or assess potential diagnostic and treatment options. It does NOT include all information about conditions, treatments, medications, side effects, or risks that may apply to a specific patient. Patients must speak with a health care provider for complete information about their health, medical questions, and treatment options, including any risks or benefits regarding use of medications.

Diagnosing Rosacea

Dermatologists at NYU Langone can diagnose rosacea by visually examining your skin and evaluating your symptoms to identify what may be triggering the condition. Rosacea is a chronic skin condition that causes redness, flushing, inflammation, and blemishes. It typically affects adults older than age 30 and tends to appear on the cheeks, forehead, nose, and chin, though it may affect skin in other areas of the body.

Medication for rosacea

Oral Medication for Rosacea:

NYU dermatologists may recommend a combination of topical medications and oral medications to treat patients with rosacea. Oral medications are taken by mouth and are particularly helpful in treating people who have symptoms-such as blemishes or whiteheads—that are resistant to topical medications.

- Oral Antibiotics
- Oral Isotretinoin
- Treatment for rosacea
- Topical Treatment for Rosacea

For many people, the highly visible symptoms of rosacea affect their willingness to interact socially, especially in public or in the workplace. Although there is no cure for rosacea, its symptoms can be controlled with proper treatment. Our dermatologists work closely with you to find a treatment plan that targets your symptoms and is a good fit with your lifestyle.

Antibiotics

Your doctor may prescribe a topical antibiotic preparation, such as metronidazole, to make your skin look less puffy and red and to reduce the number of blemishes. Certain antibiotics have an anti-inflammatory effect, which is why they can be effective at reducing redness and blemishes.

Topical antibiotics

- Metronidazole
- Clindamycin
- Clindamycin and benzoyl peroxide

- Sulfur and sodium sulfacetamide

Oral antibiotics

- Tetracycline
- Minocycline
- Erythromycin
- Doxycycline
- Metronidazole
- Azithromycin

Topical anti-acne agents

- Tretinoin
- Benzoyl peroxide

Systemic anti-acne agents

- Isotretinoin

Anti-inflammatories

Topical

- Cortisone creams
- Azelaic acid
- Ivermectin
- Calcineurin inhibitors

Systemic non-steroidal anti-inflammatory agents

- Diclofenac

Medical & Surgical Procedures for Rosacea

Topical treatments and oral medicationsare often successful in easing rosacea symptoms, but facial redness and blemishes can persist or cause scarring that requires further treatment. In addition, phymatous rosacea, which causes skin to thicken, is best treated with medical and surgical treatments such as laser therapy and electrosurgery.

Dermatologists at NYU Langone can improve the clarity and smoothness of your skin using these techniques, which are safe and relatively painless. They are done right in your dermatologist's office.

Laser Therapy

Laser therapy uses highly focused, powerful beams of light to alleviate redness, reduce the size and appearance of surface blood vessels, and diminish scarring. Sometimes lasers may be used to reduce the thickened outer layers of skin that accumulate on the nose in rhinophyma, a condition associated with rosacea that causes the nose to become bumpy and swollen.

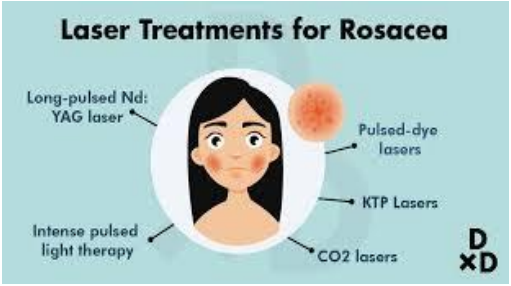

Fig no: 8 laser treatment in rosacea

Electro surgery:

Electro surgery is another method of reducing facial redness by eliminating larger blood vessels that are visible beneath the surface of the skin. A dermatologist uses a thin needle to apply a weak electrical current directly to these blood vessels, causing them to clot and shrink.

Fig no: 9 eletrosurgery in rosacea treatment

Adverse effects from medication

Common side-effects include:

- Constipation
- Diarrhea
- Nausea
- Liver damage
- Headache
- Urinary tract infection
- Infections in the sinuses, nose, throat
- Upper respiratory infection
- Low blood pressure
- Fatigue
- Lightheadedness
- Cold hands
- Eye pain
- Eye infection
- Blurred or a decrease in vision
- Nausea or vomiting

4. Conclusion

Targeting symptoms and signs with novel treatments (stepwise) and combinations of therapy will significantly improve rosacea. Clear instructions and expectations are required to optimize therapy. Advice on cosmetics, camouflage and photo protection, as well as avoiding triggers, should be part of any consultation.

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