



## INERTIA AROUND GENERAL PHYSICAL EXAMINATION- HANDS CAN BE A WINDOW TO HEART !!

### RHEUMATIC MITRAL VALVE ENDOCARDITIS WITH IMMUNOLOGICAL AND VASCULAR PHENOMENON

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**ABSTRACT** Infective endocarditis is an infrequent cause of pyrexia of unknown origin with an array of cutaneous manifestations. Careful dermatologic examination in busy out-patient department settings can narrow the differential diagnosis. This contemplative case-report aims to decipher the centuries-old art of clinical methods in modern medical practice.

**KEYWORDS :** Infective Endocarditis, Osler's Nodes, Janeway Lesions

**Introduction:**

Endocarditis is a bacterial or fungal infection of the valvular or endocardial surface of the heart<sup>1</sup>. Infective endocarditis is a relatively rare infectious disease process with high morbidity and mortality. Recently nosocomial infections, non-nosocomial infections with Staphylococcal species are on rise<sup>2</sup>. Dermatologic lesions, Osler's nodes and Janeway lesions can reflect cutaneous manifestations of systemic illness with clues for a precise clinical diagnostic hypothesis<sup>3</sup>. Patients with cutaneous manifestations of infectious endocarditis have significantly high rates of systemic emboli especially cerebral emboli<sup>1</sup>.

**Case report:**

A 26-year gentleman presented to the out-patient department in view of pain over left-palm which had begun 15 days ago. On probing, there was a history of on and off fever over the past 3 months, followed by swelling and pain over right ankle with tenderness and limited the ability to walk and history of **fleeting joint pains** in left ankle and right knee followed by left knee and no history of subcutaneous nodules or discolouration of urine or a recent skin infection. Fifteen days prior to presentation, **swelling over the medial aspect of left palm was noticed characterized by erythema and tenderness**(Figure 1,2). He is a non- smoker and non-alcoholic, socio-economic history is suggestive of over-crowding.

On General Physical Examination, the patient was conscious, coherent with a pulse rate of **100 per minute, high-volume regular pulse**, no radio-radial or no radio-femoral delay with condition of vessel wall being normal, blood pressure in right upper limb in sitting position 120/70mm Hg, left upper limb 110/70 mmHg, left lower limb 130/70 mmHg. There was no pallor, icterus, cyanosis and clubbing. **Examination of hands showed a tender, erythematous 4cm x 2cm nodular swelling on the medial aspect of left palm and with a non-tender macule of 0.5cm over left ring finger**. Abdominal palpation confirmed mild splenomegaly.

On cardiovascular examination, the apex is shifted downward, outward and hyperdynamic in character, a grade 4/6 pansystolic murmur was heard in the mitral area radiating to left axilla, better heard in a left lateral position with breath held in expiration and intensity of murmur increasing with isometric handgrip and decreased with Valsalva manoeuvre suggestive of mitral valvular regurgitation.

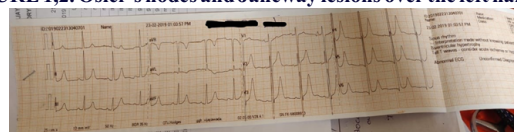
Labs revealed Random Plasma Glucose-66 mg/dl; Serum Creatinine-0.9mg/dl; Serum Direct Bilirubin-0.1 mg/dl; Aspartate Transaminase-28 IU/L; Alanine Transaminase-37 IU/L; Serum Alkaline Phosphatase-175IU/L; Serum Total Proteins-7.3 gm/dl; Serum Albumin-3.4gm/dl; Serum Globulin-3.9gm/dl; Serum Indirect Bilirubin-0.4mg/dl; Serum Bilirubin-0.5mg/dl; Serology for HBsAg and HCV-Negative; Hemoglobin-10.5gm/dl; Total Leucocyte Count-10,400/mm<sup>3</sup>; Neutrophils-65%; Lymphocytes-30%; Monocytes-5%; ESR-30mm/hour; with Routine **Ultrasonography of Abdomen revealed Mild Splenomegaly**; ECG showing Sinus Tachycardia with Biventricular Hypertrophy and Tall T waves(Figure 3), Two-Dimensional Echocardiography findings of dilated Left Atrium and Left Ventricle ,no Regional Wall Motion Abnormality, fair LV Systolic function (Ejection fraction- 55%),Intact Interventricular and

Interatrial septa, eccentric Severe Mitral Regurgitation, with **vegetation seen on posterior mitral leaflet on atrial side 0.5 cm** (Figure 4,5);Ophthalmologic examination revealed normal media,macula,vessels and disc; **urine microscopy revealed 2-4 RBC per high power field**. Two blood culture specimens were sent under aseptic precautions. In the first culture sample, **Staphylococcus aureus was isolated** with sensitivity to Linezolid, Ampicillin, Gentamicin, Piperacillin-Tazobactam, Vancomycin. The second culture sent was reported sterile.

**He was provisionally diagnosed as a case of Rheumatic acute mitral valvular infective endocarditis in view of one major and four minor criteria fulfilled according to Modified Duke's criteria for infective endocarditis**, he was started empirically before the culture reports on Inj. Ceftriaxone 2gm IV 6<sup>th</sup> hourly and Inj.Gentamicin 500mg IV 8<sup>th</sup> hourly with analgesics, proton pump inhibitors, maintenance fluids and diuretics. His clinical condition improved after two weeks with complete resolution of pain in the left hand and was subsequently referred to cardiology care for mitral valvuloplasty.



**FIGURE 1,2. Osler's nodes and Janeway lesions over the left hand.**



**FIGURE 3. ECG with features of sinus tachycardia and biventricular hypertrophy**



## FIGURE 4: 2D Echocardiographic findings of mitral regurgitation and vegetation over the posterior mitral leaflet

### Discussion:

Osler's nodes and Janeway lesions are the legendary signs and clues associated with infectious endocarditis<sup>5</sup>. Osler's nodes are areas of painful nodular erythema in the **skin of the pads of the fingers and toes, the thenar eminences**, the sides of the fingers, and the skin of the lower part of the arm<sup>6</sup>. They are erythematous, sometimes with a very pink hue, with a slightly opaque centre. Osler's nodes have an average diameter of 1 to 1.5 mm and are small painful emboli from the cardiac vegetations which completely resolve after antibiotic therapy, usually within hours to days as observed in this case-report. Pain is due to their lodging in the densely packed tissue of the fingers and toes.

Janeway lesions are non-tender, erythematous or violaceous maculae on the palms and/or soles manifest as microabscesses in the dermis rich in neutrophils with thrombosis of small vessels. These lesions although observed in infectious endocarditis, they are also found in several noninfective diseases, such as systemic lupus erythematosus, myxoma, eosinophilic endomyocarditis<sup>7</sup>.

Infective endocarditis is the most common condition associated with these lesions. Osler's nodes were present in 40% -90% of cases of endocarditis in the pre-antibiotic era, whereas after introduction of antibiotics in late 1980s they were seen in 10%-23% of cases. No such estimates exist for Janeway lesions. Infective endocarditis being the most common cause of these cutaneous lesions clinical examination can give a clue to diagnosis. Thus, immediate blood cultures and echocardiography performed in all cases of suspicion facilitates early treatment initiation and prevents long-term complications.

### Conclusion:

In Modified Duke's criteria for the diagnosis of Infective endocarditis ,cutaneous minor criteria include the vascular phenomenon i.e. Janeway lesions and immunological phenomena Osler's nodes<sup>8</sup>. General physical examination and a good note of chronology in history helps in striking a cord to Physicians' perspective and clinical diagnosis. **Clinical skills are heavily under-rated in the current scenario of sophisticated investigations.** This case is yet another example to unmask clinical diagnosis over ancillary diagnosis.

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