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"AN UNUSUAL CASE OF NEW ONSET NEPHROPATHY IN A PATIENT OF PSORIASIS: CASE REPORT AND REVIEW OF LITERATURE"

Medicine

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ABSTRACT

Psoriasis is known to cause chronic inflammatory disorder of the skin through an immune mediated mechanism, it may be complicated by different types of glomerular lesions. Three different mechanisms have been implicated by which psoriasis can cause renal damage: immune-mediated renal damage, drug-related renal damage and chronic renal damage. This report presents a case of 35 years old male patient with extensive psoriasis, who presented to our hospital with nephrotic syndrome.

KEYWORDS

Kidney, Psoriasis, nephrotic syndrome

INTRODUCTION

Psoriasis is a chronic inflammatory autoimmune disorder involving the nails and skin is known to affect around 5% of the general population. Results from various large population studies suggest that psoriasis tend to increase the risk of various co morbidities such as metabolic syndrome, CVS diseases, hypertension, diabetes and renal damage. These studies also indicated increased mortality for all cause. [1] The pathogenesis in these disorders because of chronic inflammation driven by activation of T cell cytokines (TNF alpha) although a link between renal impairment and psoriasis has been advocated. There are case reports and paradoxical results. [2]

Case Report

A 35year old male patient known case of extensive psoriasis presented to the hospital for complaint of generalised edema. Which was sudden in onset gradually progressive there was no history of hematemesis, hemoptysis and joint pain. At present patient did not experienced dyspnea neither in supine nor in sitting position. There was no history of diabetes and hypertension. There was history of alcohol consumption and smoking. He was then subjected to routine evaluation to look out for various possible etiologies.

Fig 1: Pretreatment parameters

Parameters	Values
Hb	9 mg/dl
Cholesterol	300
Tryglycerides	180
HDL	50
Albumin	2.5
Proteinuria	3+

Fig 2: Post treatment parameters

Parameters	Values
Hb	12
Cholesterol	190
Tryglycerides	135
HDL	65
Albumin	3.5
Proteinuria	nil

Patient was advised for renal biopsy for conformation but could be performed as patient was not willing for it. On the basis of lab parameters which included hyperlipidemia, proteinuria, hypoalbuminemia, and edema a diagnosis of nephrotic syndrome with psoriasis was made.

Patient was started on methotrexate 15mg once a week with 6 weeks of treatment, diuretics i.e., a combination of furosemide and Aldactone for two weeks and prednisolone 60mg on first two weeks and then gradually tapering it 40mg for the next two weeks and 20 mg for next two weeks and then stopped, patient was also recommended for biologicals but he denied due to financial issues. On follow up visit patient as shown in the images the psoriatic lesions healed without any scales or inflammation. There was significant decrease in the pedal edema as well. Owing to ongoing pandemic patient could not be followed up there after. All routine investigations were repeated on his last visit the results have been mentioned in table.

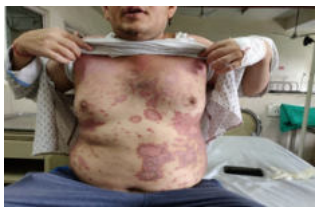

Image 1

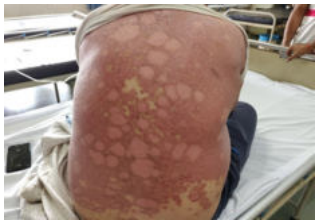

Image 2

Pretreatment (Image 1 and 2)

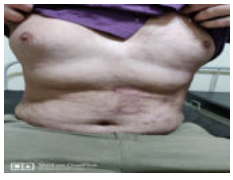

Image 3

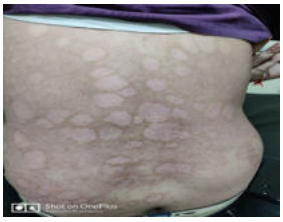

Image 4

Post treatment (Image 3 and 4)

DISCUSSION

Psoriasis is one of the commonest chronic inflammatory, autoimmune and proliferative disorder involving the skin, which is characterized by sharply, demarcated dull-red scaly plaques. [3] Although the exact etiology is not clearly understood, but it is postulated that primary T-lymphocyte play an important role in the immunopathogenesis of the disease. In this condition there is a mismatch between a proinflammatory and anti-inflammatory cytokines, there is significant reduction in the levels of anti-inflammatory cytokines interleukin-10 (IL-10) and IL-4 and t cell mediated inflammation which is brought about by T-helper 1 and T-helper 17 cytokines, both tend to increase the T cell formation and thereby leading to upregulation of proinflammatory cytokines.

PSORS2, which is a psoriasis susceptibility gene have shown a linkage with the genes involved in the regulation of interleukin 2 in the studies conducted previously. [4] Similarly, minimal change disease and Focal segmental glomerular sclerosis pathogenesis is also attributable to cell mediated immune mechanism and hence arises a possibility of correlation between the two diseases. Further studies are needed in the area to fully understand the connecting link between the two diseases. Varying degree of glomerular involvement can be present in patients of, the patient could present impaired and deteriorating kidney functions, hematuria, proteinuria and nephrotic syndrome as in our case. [5] over recent years though there has been increase in number of documents supporting glomerular involvement in psoriasis but cases have been rarely reported. One of the most frequent glomerulo nephritis that is associated with psoriasis is IgA nephropathy, it is usually characterized by the sub-nephrotic range of proteinuria. [3,6]

Development of IgA nephropathy in patient of psoriasis suggests that dysregulation of IgA system could possibly be playing a role in pathogenesis of psoriasis as well. This dysregulation may result in an increase in the levels of serum IgA or circulating immune complexes that contains IgA, or due to genetical predisposition in certain individuals there's a possibility of an intrinsic defect in the structure of IgA, leading to IgA deposition in the mesangium, may be present in psoriasis. [3]

Psoriasis have also been associated with other forms glomerulo nephritis, one such GN is membranoglomerulonephritis (MGN), itis a complication of drugs (NSAIDs, gold salts). [7] Rarely psoriasis has been associated with other forms of GN like minimal change disease mesangiocapillary glomerulonephritis, amyloidosis, and MPGN. [8,9,10,11]

An independent risk factor for development of systemic manifestations in psoriasis in extent of skin involvement. 3 to 10% of skin involvement is seen in moderate cases of psoriasis, while >10%.skin involvement is seen in severe psoriasis.

Psoriasis which in a chronic inflammatory autoimmune disease is believed to have increased cytokine production, which is thought to be accountable for deterioration of the various organs including the renal system. [12] a study conducted in the recent past Wan et al. have successfully established a positive correlation between psoriasis and chronic kidney disease independent of risk factors comorbidities such as diabetes mellitus, cardiovascular disease, and metabolic syndrome. [13] Another study Ching-Chi Chi et al. results showed not only there is positive correlation between psoriasis and CKD but also validated a positive correlation between severe psoriasis and progression of CKD to end stage renal disease. This hypothesis does not hold true with the mild and moderate form of the disease. [14]

CONCLUSIONS

Psoriasis is known to affect multiple organs at a time that tend to increase the risk of renal involvement, therefore, all the patients of psoriasis should be subjected to renal profile evaluation with special emphasis on patients who have more than 3% involvement of the body surface area. This includes evaluating the patient for urine analysis to look out for presence of significant hematuria and presence of protein and routine kidney function test to evaluate blood urea nitrogen and creatinine, that can further be to estimate the GFR.

Early detection of the renal impairment can help us delay the progression of the disease.

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