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Case Report

Coexistence of Chronic Renal Disease with Rosacea

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Background: We report the case of a patient with long-standing Rosacea and a newly developed Chronic Renal Disease (CKD).

Case Presentation: 51-year-old Caucasian male with history of moderate-to-severe Rosacea for 10 years, now presents with symptoms of CKD stage III.

Conclusion: Rosacea could be a risk factor for CKD so careful monitoring for CKD occurrence as a part of diagnostic workup for Rosacea.

Keywords: Rosacea, Chronic Renal Disease

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Rosacea is a chronic inflammatory skin disorder characterized by centrofacial erythema, telangiectasias, papules, and pustules. Abnormality in immune response (overexpression of pro-inflammatory cytokines) and dysregulation of the neurovascular system are thought to be key pathophysiologic components of the disease. [1] Studies done recently suggest that rosacea is a systemic disorder and not merely a skin condition. Prior studies reported that it is associated with dyslipidemia, hypertension, metabolic diseases, alcohol consumption, tobacco smoking, cardiovascular diseases, and gastroesophageal reflux disease, [2] all of which are also prevalent in patients with chronic kidney disease (CKD). [3]

Because rosacea and CKD share some pathogenic mechanisms (inflammation/oxidative stress) and associated conditions, it is tempting to posit an association between these diseases.

Case Presentation

51-year-old Caucasian male from Lahore, Pakistan with a history of moderate-to-severe Rosacea for 10 years, now presents with fatigue, weakness, swelling in lower limb and polyurea for 6 months.

He denies weight changes, dyspnea, hematuria, dysuria, urgency and nocturia. His medical history is significant for Rosacea for 10 years and hyperlipidemia for 5 years for which he was taking medications. Other than these two conditions his medical and surgical history was insignificant. His family history was insignificant as well. The patient denied having allergies and also denied drug abuse.

Patient had no fever at presentation with blood pressure 120/80 mm hg, Pulse 80 bpm and Respiration 16/min.

Pedal edema 2+ was positive in both lower extremities.

General physical exam was insignificant. Physical exam of the abdomen was normal with no ascites and no costovertebral angle tenderness. Heart, Jugular venous distention (JVD) and respiratory sounds were normal.

Blood test and Renal Function test

Creatinine 2.1 mg/dl, BUN 38 mg/dl, Sodium 138 mmol/L, Potassium 5.2 mmol/L, Chloride 110 mmol/L, Bicarbonate 21 mmol/L, Calcium 9.4 mg/dl, Phosphorous 4.1mg/dl, Uric acid 4.6 mg/dl, WBC 8.5 x 10^9/L, hemoglobin 13.5g/dl, Platelet 308 x 10^9/L.

Serologies

Autoantibodies: antinuclear antibodies (ANA), classical antineutrophil cytoplasmic antibodies (c-ANCA), protoplasmic-staining antineutrophil cytoplasmic

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antibodies (p-ANCA), antiglomerular basement membrane (anti-GBM) antibodies (very suggestive of underlying Goodpasture's syndrome) and serum complement: All Negative.

Hepatitis serology: Negative

HIV serology: Negative

Liver test

Albumin 4.3g/dl, Total Cholesterol 318mg/dl, Triglyceride 288mg/dl, HDL 32mg/dl, LDL 192mg/dl.

Urine analysis

Nil RBCs, Nil WBCs and 24-hour Albumin-Creatinine Ratio (ACR) = 15mg/mmol. Glomerular Filtration rate (GFR) = 47.1 mL/min/1.73 m2 in (80 kg male).

Renal Ultrasound

Reduced renal length.

Increased renal cortical echogenicity.

Poor visibility of the renal pyramids and the renal sinus.

No renal artery stenosis.

Classification GFR

CKD is classified based on eGFR and albuminuria categories.

Table 1. eGFR Categories

Category	eGFR (mL/min/1.73 m^2)	Description
G1	>90	Normal or high
G2	60-89	Mildly decreased
G3a	45–59	Mildly to moderately decreased (CKD)
G3b	30–44	Moderately to severely decreased (CKD)
G4	15–29	Severely decreased (CKD)
G5	**<15**	**Kidney failure (CKD)**

Table 2. Albuminuria (ACR) Categories

Category	ACR(mg/mmol)	Description
A1	<3 mg/mmol	Normal to mildly increased
A2	3-30 mg/mmol	Moderately increased (CKD)
A3	**>30 mg/mmol**	**Severely increased (CKD)**

On the basis of history, physical exam, laboratory and radiological evidence patient was diagnosed with Chronic Kidney Disease Stage 3.

Discussion

In (2017 Oct 2), Chiu H-Y, Huang W-Y. run a cohort study on 277 patients with rosacea in the Taiwan National Health Insurance Research Database during 2001-2005. These patients were matched for age, sex, and comorbidities with 2216 patients without rosacea. All subjects were individually followed-up for 8-12 years to identify those who subsequently developed CKD.

The incidence rates of CKD per 1000 person-years were 16.02 in patients with rosacea and 10.63 in the non-rosacea reference population. After adjusting for other covariates and considering the competing risk of mortality, patients with rosacea remained at increased risk of CKD (adjusted sub-distribution hazard ratio (aSD-HR) 2.00; 95% confidence interval (CI) 1.05–3.82). The aSD-HRs (95% CI)

for CKD were 1.82 (0.83–4.00) and 2.53 (1.11–5.75) for patients with mild and moderate-to-severe rosacea, respectively. [6]

Chronic kidney disease (CKD) is a term that include all degrees of decreased renal function (mild, moderate, and severe chronic kidney failure). CKD is a worldwide public health problem. In the United States, there is an increase incidence and prevalence of CKD, with poor outcomes and high costs. The prevalence of CKD is more in elderly population. The progression differs in young from elderly, younger patients with CKD typically experience progressive loss of kidney function, 1/3 of patients over 65 years of age with CKD have stable disease. [4] CKD increases risk of cardiovascular disease and chronic renal failure. Kidney disease is the ninth leading cause of death in the United States. [5]

According to the National Rosacea Society, more than 14 million Americans suffer from the condition called Rosacea. Rosacea is an inflammatory skin disease similar to acne that can affect the nose, cheeks, chin and eyes. Sometimes called acne rosacea, it is poorly understood disease but it is common.

Because Rosacea is chronic inflammatory disorder and CKD can also involve inflammation/oxidative stress, so there can be some kind of association in the underlying pathogenesis of both conditions. [6]

Conclusion

Rosacea could be associated with CKD so careful monitoring for CKD occurrence as a part of the diagnostic workup for rosacea is needed. Patients with rosacea and their physicians should be aware of this potential link with CKD. Careful monitoring of renal function and avoidance of long-term use of nephrotoxic drugs should be considered as part of integrated care for patients with rosacea, particularly those older than 50 years. This needs more study and research.

Conflict of Interest

None

Acknowledgement

All authors contributed equally

Ethical Approval

Informed consent was obtained from the patient for publication of this case report.

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