

Case Report

Metformin induced bullous pemphigoid, the first case

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ABSTRACT

Bullous pemphigoid is a polymorphic autoimmune subepidermal blistering disease seen in elderly individuals. Exact etiology of this autoimmune process is not known. Induced bullous pemphigoid has been associated with several drugs but metformin is not one of them. Here I have reported one such rare case of metformin induced Bullous Pemphigoid (BP).

Keywords: Bullous pemphigoid, Metformin

INTRODUCTION

Bullous pemphigoid is a polymorphic autoimmune subepidermal blistering disease seen in elderly individuals. Exact etiology of this autoimmune process is not known. Induced bullous pemphigoid has been associated with several drugs but metformin is not one of them. Being the first line agent in the treatment of type 2 Diabetes Mellitus (DM) metformin is used widely. Here I have reported one such rare case of metformin induced Bullous Pemphigoid (BP) which has not been reported in medical literature so far.

CASE REPORT

A 64 year old female with history of type 2 DM attended OPD with uncontrolled glycaemic status. Her Fasting Plasma Glucose (FPG) was 192 mg/dl, Post Prandial Plasma Glucose (PPPG) 265 mg/dl and HbA1C 8.7%. She was on regular Soluble Insulin injection thrice daily.

She was advised to take metformin 500 mg twice daily along with increase in the dose of regular meal time insulin injection and to visit after 2 weeks. After 12 days she came to emergency department with erythematous

blistering lesions involving both upper limb, trunk, lower limb and scalp region. On examination it was found that erythematous bullous lesions were tense, contained clear fluid and were of varying sizes (4 cm - 8 cm in diameter) (Figure 1). There was no mucosal involvement.



Figure 1: Showing tense fluid filled bullae over flexor aspect of arm.

She was admitted and treated for drug hypersensitivity reaction and skin biopsy was sent for histopathology examination and direct immunofluorescence. At that time

her FPG was 129 mg/dl, PPPG - 165 mg/dl, blood urea - 41 mg/dl, creatinine - 1.2 mg/dl. Complete hemogram was within normal limits. Liver function test was within normal limits. Urine examination was insignificant except for mild proteinuria. On admission her vitals were stable.

She was not taking any other medication apart from advised one and had no prior history of any drug allergy neither she had any major illness of any kind.

After 7 days the blisters started to heal without any scarring lesions (Figure 2). Biopsy report confirmed this as case of Bullous Pemphigoid (BP) (Figure 3, 4).



Figure 2: Showing healing of bulla without any scarring.

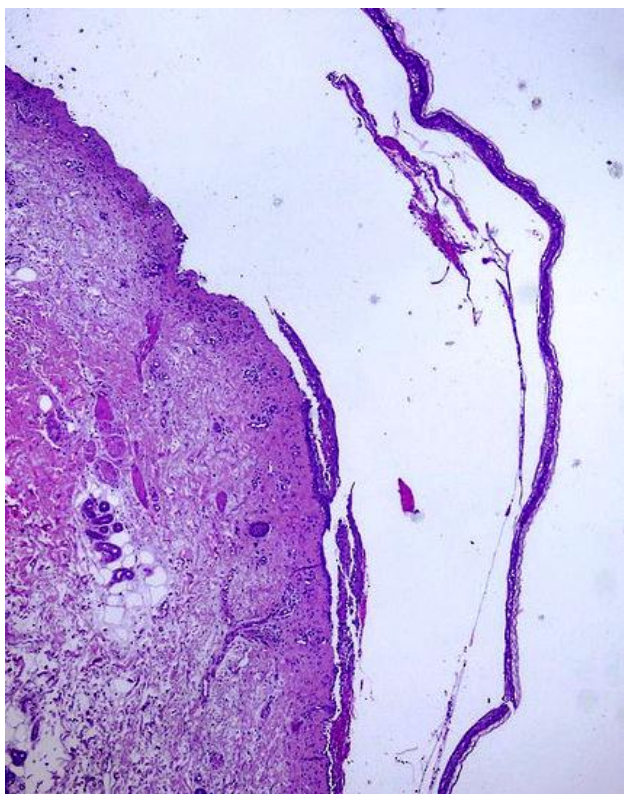


Figure 3: Histopathology showing eosinophilic infiltration with subepidermal bullae.

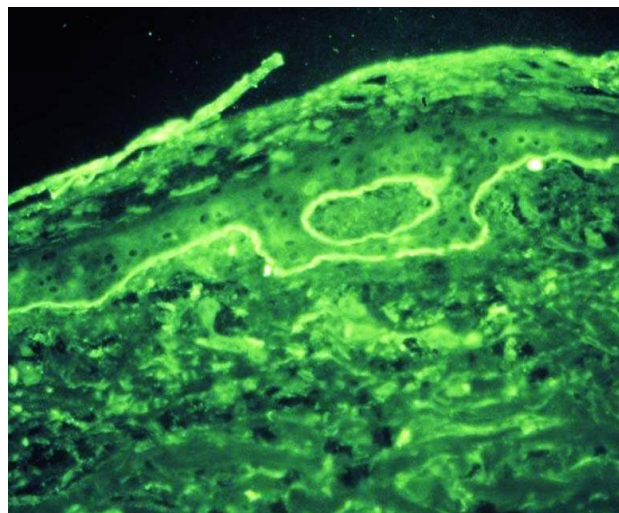


Figure 4: Immunofluorescence study showing linear IgG deposition at dermo-epidermal junction.

She was discharged after 14 days with only insulin as antidiabetic regimen and followed up for 1 month which was uneventful.

DISCUSSION

Bullous Pemphigoid (BP) is an autoimmune disease caused by formation of antibody against hemidesmosomal protein Bullous Pemphigoid Antigen - BPAG 1 and BPAG 2 resulting in deposition of immunoglobulin IgG in basal cell-basement membrane region in a linear fashion. The etiology for this underlying disease is not known. It most commonly occurs in the elderly, especially ages 60 years and over, and has increased risk for mortality as well as long term morbidity.¹

Several drugs have been implicated for causation of BP that includes furosemide,² spironolactone,³ sulphasalazine, penicillins, penicillamine,⁴ β blocker⁵ and with gliptins.⁶ But metformin has not been reported to cause BP in medical literature so far. Being the first line of agent in type 2 DM it is used widely and it is very effective also. Metformin is not known to cause very severe adverse effects (lactic acidosis is rare) if used properly apart from mild gastro intestinal upset. But in this case induced BP by metformin could be very dangerous. Several reports earlier have mentioned association of BP with gliptins however it must be noted that those patients were also taking metformin along with gliptins.

The underlying pathogenesis of metformin induced BP could be related to increase level of transforming growth factor beta (TGF β), increase in eosinophil level or simply manifestations of unprecedented drug allergy. Whatever it is, the ultimate outcome could be fatal if not diagnosed and treated in time.

CONCLUSION

Safe drug metformin can cause bullous pemphigoid in rare instances with its grave implications. Timely detection and treatment can save fatal outcomes.

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