Epidermal growth factor receptor inhibitor related cutaneous toxicity

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Background

- Patients with rash are common on acute medical wards
- Diagnosis often made unaided by dermatologist
- Drug reactions are among the most common causes of rash in hospitalised cancer patients[1]
- We present an onchological case with purpuric rash admitted to an acute medical ward

Case

History

- 58 year old man with background of right sided non-small cell lung cancer (NSCLC) with brain metastasis
- Treated with afatinib
- Presented with dyspnoea, productive cough and rash

Clinical findings

- Decreased air entry from right lung base
- Widespread non blanching macular rash of purpuric appeance (fig. 1-4)

Investigations

- Autoimmune screening blood tests negative

Diagnosis and treatment

- Treated for pneumonia with broad spectrum antibiotics
- Dermatology team not available for ward review
- Reviewed by the onchology team, diagnosed with afatinib related rash
- Afatinib stopped, treated with dexametasone
- Pneumonia improved and rash resolved after 10 days

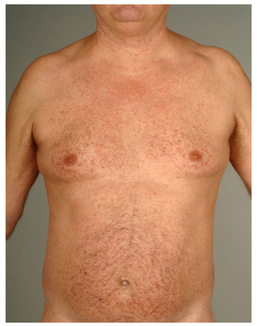

Figure 1. Rash of the abdomen and chest

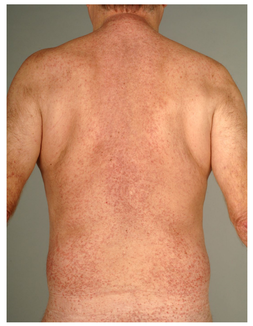

Figure 2. Rash of the back

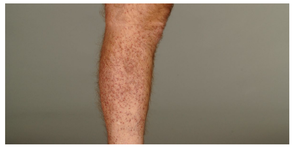

Figure 3. Rash of the legs

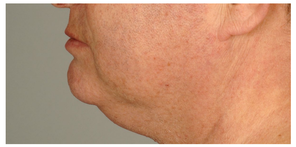

Figure 4. Rash of the face

Differential diagnoses	Causes
Primary vasculitis	Typically Henoch Shönlein purpura
Secondary cutaneous vasculitis[8]	Infectious causes •Hepatitis B and C, haemorrhagic fever Paraneoplastic reactions Adverse rug reactions Allergic reactions Autoimmune diseases •Rheumatoid arthritis, systemic lupus erythematosus, Sjögren's syndrome
Cutaneous pseudo-vasculitis[9]	Hemorrhagic •Vessel wall deposition of amyloid or calcium, scurvy, nonvasculitic inflammatory purpura (pigmented purpuric dermatitis, arthropod, viral and drug reactions), degeneration of the vessel wall (senile/solar purpura), vessel wall invasion of infective organisms, coagulation-fibrinolytic disorders, vessel wall trauma Cyanotic-infarctive •Vaso-occlusion by emboli or thrombi, fibrointimal hyperplasia (endarteritis obliterans)

Table 1. Differential diagnoses for vasculitic rash

Discussion

- Afatinib is a second-generation epidermal growth factor receptor (EGFR) inhibitor used in NSCLC positive for EGFR-mutations
- Cutaneous toxicity is the most frequent adverse effect of EGFR inhibitors[2]
- The most common are papulopustular rash (affecting about 90% of patients), xerosis and pruritus[3]
- There are few previous reports of rash of purpuric morphology caused by the EGFR inhibtors[4,5,6]
- Histological features of EGFR inhibitor induced purpura include perivascular infiltration of lymphocytes and neutrophils, and is cathegorised in one report as leukocytoclastic vasculitis[4,6]
- There is an association between the incidence and severity of cutaneous toxicity and tumour response to EGFR inhibitors[2]
- The cutaneous reactions cause decreased quality of life[3,7]
- Treatment for EGFR inhibitor induced cutaneous toxicity include corticosteroids, antibiotics and retinoids, and in severe cases dose reduction or interrupting EGFR inhibitor treatment is needed[2]

Conclusion

- A case of afatinib induced cutaneous toxicity of purpuric appearance that resolved after causing agent was discontinued
- The case highlights the importance of including antineoplastic medications in medication history for patients with rash and remembering the cutaneous side effects of EGFR inhibitors

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