

Hand-Foot Syndrome or Palmar-Plantar Erythrodysesthesia (PPE)



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Case Report

A 32-year-old man was found to have a low normal range of hematocrit (41.6-42.5%) for a period of 2 years. During a yearly check up the patient was found to be anemic with an anemia level of 31.5% (normal range, 43.5-53%). A colonoscopy examination discovered an ulcerated lesion with the medical aspect of the cecum just distal to the ileocecal junction. The biopsy specimen showed moderately differentiated adenocarcinoma. The patient underwent an exploratory laparotomy. There was no evidence of metastasis and a right hemicolectomy was performed. The pathological diagnosis revealed moderately differentiated adenocarcinoma involving the cecum with 25 negative regional lymph nodes. The tumor affected the mucosa, the submucosa, the muscular layer as well as the serosa.

He received a dose of chemotherapy: 2,000mg of Xeloda[®] in the morning and 1,500mg in the evening for 2 weeks. He then discontinued the medication for a week. The treatment plan was medication administered for a period of 6 months. At around 4 to 5 weeks post medication, the patient developed a tingling sensation in his fingers and toes and experienced discoloration of the skin (Figure 1,2).

The diagnosis of painful erythema and paresthesia affecting the palms and soles includes a cutaneous reaction caused by several chemotherapeutic agents and targeted therapy, graft-versus-host disease, toxic epidermal necrolysis, and necrolytic acral erythema associated with hepatitis C infection or zinc deficiency.

Discussion

This case demonstrates the skin changes to hands and feet when Xeloda[®] is administered immediately after a right hemicolectomy for Cancer cecum has been performed. The most likely diagnosis of this patient's condition is Hand Foot Syndrome (HFS) or palmer - plantar erythrodysesthesia (PPE) which is a relatively common cutaneous reaction caused by several chemotherapeutic agents with the associated targeted treatment.¹ (Table 1)

The symptomatic and histopathological findings of this disease are suggestive of direct cytotoxicity affecting the eccrine glands (the areas of highest eccrine density are on the palms and soles). This is caused by a high concentration of a chemotherapeutic agent. The clinical picture is divided into 3 grades according to severity.

Table 1: Chemotherapeutic Agents and Targeted Treatment that could cause HFS or PPE

Chemotherapeutic Agents	Targeted Treatment
Capecitabine (Xeloda®)	Sunitinib (Sutent®)
Cytarabine (Cytosar-U®)	Sorafenib (Nexavar®)
Floxuridine (FuDR®)	Pazopanib (Votrient®)
Fluorouracil (5-FU®, Adrucil)	Vemurafenib (Zelboraf)
Idarubicin (Idamycin)	Ixabepilone (Ixempra®)
Liposomal doxorubicin (Doxil®)	Lapatinib (Lapatinib)
Doxorubicin (Adriamycin)	

The National Cancer Institute (NCI) grades and definitions of the disease are as follows:

1. Skin changes or dermatitis without pain (e.g. erythema, peeling).
2. Skin changes, with pain. No interference of function.
3. Skin changes, with pain and interference of function.

The most common treatments include:²

1. Avoid extremes of temperature, pressure and friction on the skin.
2. Administer pyridoxine (50mg) twice a day.
3. Apply topical treatments such as a cold compress, emollient and topical steroids.

Conclusion

General practitioners should be aware of this condition in their normal general practice. Patients may experience skin changes to the hands and feet after chemotherapy medication (Xeloda®) has been administered.



Figure 1: Patient's fingers are discoloured



Figure 2: Patient's toes are discoloured

References

1. Hand-Foot Syndrome or Palmar-Plantar Erythrodysesthesia. Reviewed and approved by the ©2005-2012 American Society of Clinical Oncology (ASCO). Last Updated: January 23, 2012.
2. Hand-Foot Syndrome (HFS) or Palmar-Plantar Erythrodysesthesia (PPE). ©2012 Breastcancer.org (Page last modified: September 17, 2012, at http://www.breastcancer.org/treatment/side_effects/hand_foot_synd)