Chemotherapy and Fingerprint Loss: Beyond Cosmetic

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ABSTRACT

Hand–foot syndrome (HFS) is a common adverse reaction to several chemotherapy drugs. Focus has been on the clinically relevant sequelae associated with this condition, with fingerprint loss receiving little attention. We report the case of a 53-year old male patient with terminal metastatic adenocarcinoma of the rectum involving the liver and lungs who developed grade 3 HFS while on capecitabine therapy. This resulted in his inability to

process required government papers as a result of the loss of his fingerprints, imposing significant inconvenience and frustration on a person severely challenged by his deteriorating health. We believe clinicians should pay more attention to this possible outcome that can add additional stress in the lives of patients whose quality of life is already severely compromised. *The Oncologist* 2012; 17:291–293

INTRODUCTION

Hand–foot syndrome (HFS), or palmar–plantar erythrodysesthesia, is a distinct localized skin reaction characterized by erythema, numbness, tingling, and either dysesthesia or paresthesia, especially on the palms or soles. Symptoms include pain and swelling, and can progress to blistering, desquamation, and ulceration [1].

A single report describes the loss of fingerprints as a manifestation of HFS in a cancer patient who was detained several hours by airport security as a result [2]. We present the case of a patient who lost his fingerprints during the course of treatment with a capecitabine-based protocol who also experienced stressful and inconvenient administrative delays because of his condition.

CASE REPORT

A 53-year-old male patient presenting with complaints of abdominal pain and constipation was diagnosed to have stage IV adenocarcinoma of the rectum, with liver and lung metastases. He was started on a palliative chemotherapy protocol comprised of oral capecitabine (1,000 mg/m² twice daily) on days 1–15 followed by a 1-week rest, with i.v. oxaliplatin (130 mg/m²) on day 1. He developed grade 1 nausea, vomiting, diarrhea, and HFS after the second and third cycles of chemotherapy.

Subsequently, after the fifth and sixth cycles, he developed

grade 3 HFS. Paracetamol, tramadol, and topical emollients were prescribed. Chemotherapy was delayed 1 week after the fifth cycle, and the dose of capecitabine was decreased 25% in the next cycle. During this interval, he was unable to process required governmental documents on several occasions because of a lack of fingerprints. This frustrating and exhausting travel and administrative burden was imposed on an already severely deteriorated quality of life (QOL).

He was started on second-line chemotherapy following the Bev-Xeliri protocol 18 weeks after completion of first-line therapy. This regimen includes a lower dose of capecitabine and is comprised of 3-week cycles of capecitabine (825 mg/m²) on days 1–14 with bevacizumab (7.5 mg/kg) and irinotecan (220 mg/m²) on day 1. He developed grade 3 HFS, vomiting, and diarrhea, warranting cessation of treatment after one cycle. His palms and soles became swollen, painful, hyperpigmented, hardened, and desquamated (Figs. 1–3). The patient died 6 months later.

DISCUSSION

HFS is a common and sometimes serious adverse response to several chemotherapy drugs [1]. The National Cancer Institute classifies HFS into three grades to describe its severity (Table 1) [3]. The assessment of HFS is complicated when package

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Figure 1. Grade 3 hand-foot syndrome with shedding of the skin of both palms.

Figure 2. Palm is swollen and hyperpigmented.

Figure 3. Both soles are erythematous, hardened, and desquamated.

inserts for some drugs include possible desquamation with grade 1 toxicity [4].

HFS may occur within days or as long as 1 year after initiation of therapy [5], and it usually resolves spontaneously

Table 1. National Cancer Institute hand-foot syndrome grades

Grade	Definition
1	Skin changes or dermatitis (e.g., erythema) without accompanying pain
2	Skin changes (e.g., peeling, blisters, bleeding, edema) with accompanying pain not interfering with activities of daily living
3	Ulcerative dermatitis or skin changes with accompanying pain interfering with activities of daily living

1–2 weeks after treatment [6]. Effective prophylaxis is a common research objective, which has not yet met with success [7, 8]. Management is primarily symptomatic [9]; however, drug interruption and dose reduction remain the standard recommendations for responding to grade 2 and grade 3 HFS [1, 9].

HFS has been described in patients taking capecitabine in monotherapy as well as in combination regimens. Other drugs, including cytarabine, doxorubicin, epirubicin, 5-fluorouracil, high-dose interleukin-2, fluorodeoxyuridine, hydroxyurea, mercaptopurine, cyclophosphamide, and docetaxel, are known to cause HFS [10]. Newer drug classes associated with HFS include epidermal growth factor receptor inhibitors and multi-kinase inhibitors [11].

Our patient experienced considerable inconvenience as a result of his HFS. Patient education starting prior to initiating therapy that puts patients at risk for HFS is an important management tool [1, 7]. This case prompts us to believe that, in addition to providing advice about skin care and cautioning patients to report dermatologic issues as soon as they develop, patients should also be informed about the possible loss of fingerprints.

The overall effect of HFS on patient QOL has not been specifically studied [12]. We believe such a study is warranted and, because the number of agents that can cause HFS is expanding, the potential for HFS to affect patient QOL from all aspects should be considered.

Finally, increased visibility of HFS is expected as the number of countries that require fingerprinting as part of the passport and visa process rapidly expands. Agencies that require fingerprint identification should be made aware of this phenomenon, and measures to avoid unnecessary stress to patients who lose their fingerprints should be developed and implemented.

CONCLUSION

Loss of fingerprints can be a sequela to HFS in patients taking chemotherapy drugs that are associated with this syndrome. Therefore, patients should be aware of this possibility, and proper counseling should be provided. Agencies requiring fingerprint identification should be informed of this complication and should work toward developing an alternative for affected individuals.

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