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Letter to Editor Open Access

Interferon Treatment Possibly Induces Endogenous Mycotic Endophthalmitis

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Endogenous acute and invasive fungal infections are usually seen in immune deficient and debilitated patients who have a systemic debilitating disease. In specific, use of a long-term indwelling catheter for intravenous hyperalimentation (IVH) is well-recognized as the most important trigger of endogenous fungal endophthalmitis. Immunodeficiency has also been shown to occur in patients who undergo interferon treatment [1], and it has previously been reported that interferon treatment caused bone marrow suppression that might result in declines in all three blood cell lines [2]. In addition, it has been reported that interferon-induced neutropenia might put a patient at increased risk for bacterial infections.

This study involved a 66-year-old female who had presented with sudden blurred vision and ciliary injection in her right eye from a few days before receiving the first examination at the original hospital to which the patient had been referred. The patient had no history of ocular trauma or previous ocular surgery. However, she suffered from temporal neutropenia (792 cells/μl) while receiving pegylated interferon treatment for chronic hepatitis C 1 year prior to this symptom (Figure 1a). At 7 months after the cessation of pegylated interferon therapy, the patient was diagnosed with oral candidiasis.

The patient was referred to our hospital in order to undergo several examinations in an attempt to identify the original illness that caused the above-described symptoms. Upon the initial ocular examination, moderate inflammation in the anterior chamber, hypopyon, and keratic precipitates were observed. Moreover, multiple large (yellow) vitreous lesions and fluff balls were observed (Figure 1b). As a result of those clinical features, a diagnosis of mycotic endophthalmitis was considered. For treatment, pars plana vitreous surgery along with intravitreal drug infusion [vancomycin (1mg/0.1ml), ceftazidime (2.25mg/0.1ml), and amphotericin B (5μg/0.1ml)] was performed. Samples of both the vitreous body and precipitates were then taken, and pathologic diagnosis revealed that the samples contained *Candida albicans*. In addition, a polymerase chain reaction test of the vitrectomy specimen showed positive for the *Candida* genome (6.5×10^5 copies/ml). A culture from the vitreous revealed fungal growth identified as *Candida albicans*.

Endogenous fungal endophthalmitis in an immunocompetent state is very uncommon, and to date, there has been only one clinical case report where it is described [3]. In this present case, the patient was in an immunocompetent state at our initial examination. However, she had obvious temporary neutropenia during interferon therapy. Oral candidiasis following pegylated interferon therapy is well documented previously [4]. In that report, temporary neutropenia caused by interferon therapy, possibly accounting for the immunocompromised state, was apparent in the patient.

The patient in this present study experienced an episode of neutropenia during pegylated interferon therapy. Seven months after the cessation of the pegylated interferon therapy due to general fatigue and neutropenia, the patient suffered from oral candidiasis. Fungal endophthalmitis was indicated 1 month after successful treatment of the oral candidiasis with the topical administration of miconazole gel. However, the patient did not have any major clinical or experimental findings of neutropenia at that time. We hypothesized that the fungal endophthalmitis originated from the oral candidiasis, as described in previous reports [5]. There was no origin of the immunodeficiency other than the temporary neutropenia during pegylated interferon treatment. However, endogenous endophthalmitis is defined as an intraocular infection resulting from hematogenous bacterial spread. It is relatively rare, accounting for 2 to 8 percent of all cases of endophthalmitis including fungi. In accordance with the findings of the previous report, this present case should be considered as one of the rare cases of this endophthalmitis pattern.

In conclusion, since an immunocompromised state is possibly caused by the use of any immune suppressive drug such as steroids, anti-cancer drugs, and pegylated interferon, a periodic funduscopy examination is recommended for the early detection of other opportunistic infections, and a blood test should be performed routinely to detect pancytopenia and neutropenia.

References

1. Fried MW (2002) Side effects of therapy of hepatitis C and their management. Hepatology 36: S237-244.
2. De Franceschi L, Fattovich G, Turrini F, Ayi K, Brugnara C, et al. (2000) Hemolytic anemia induced by ribavirin therapy in patients with chronic hepatitis C virus infection: role of membrane oxidative damage. Hepatology 31: 997-1004.
3. Gupta P, Sachdev N, Kaur J, Dey P, Gupta V, et al. (2008) Endogenous mycotic endophthalmitis in an immunocompetent patient. Int Ophthalmol 29: 315-318.
4. Hattori H, Inoue C, Tomita Y, Kanbe T (2007) A case of oral geotrichosis caused by Geotrichum capitatum in an old patient. Jpn J Infect Dis 60: 300-301.
5. Shah CP, McKey J, Spirn MJ, Maguire J (2008) Ocular candidiasis: a review. Br J Ophthalmol 92: 466-468.

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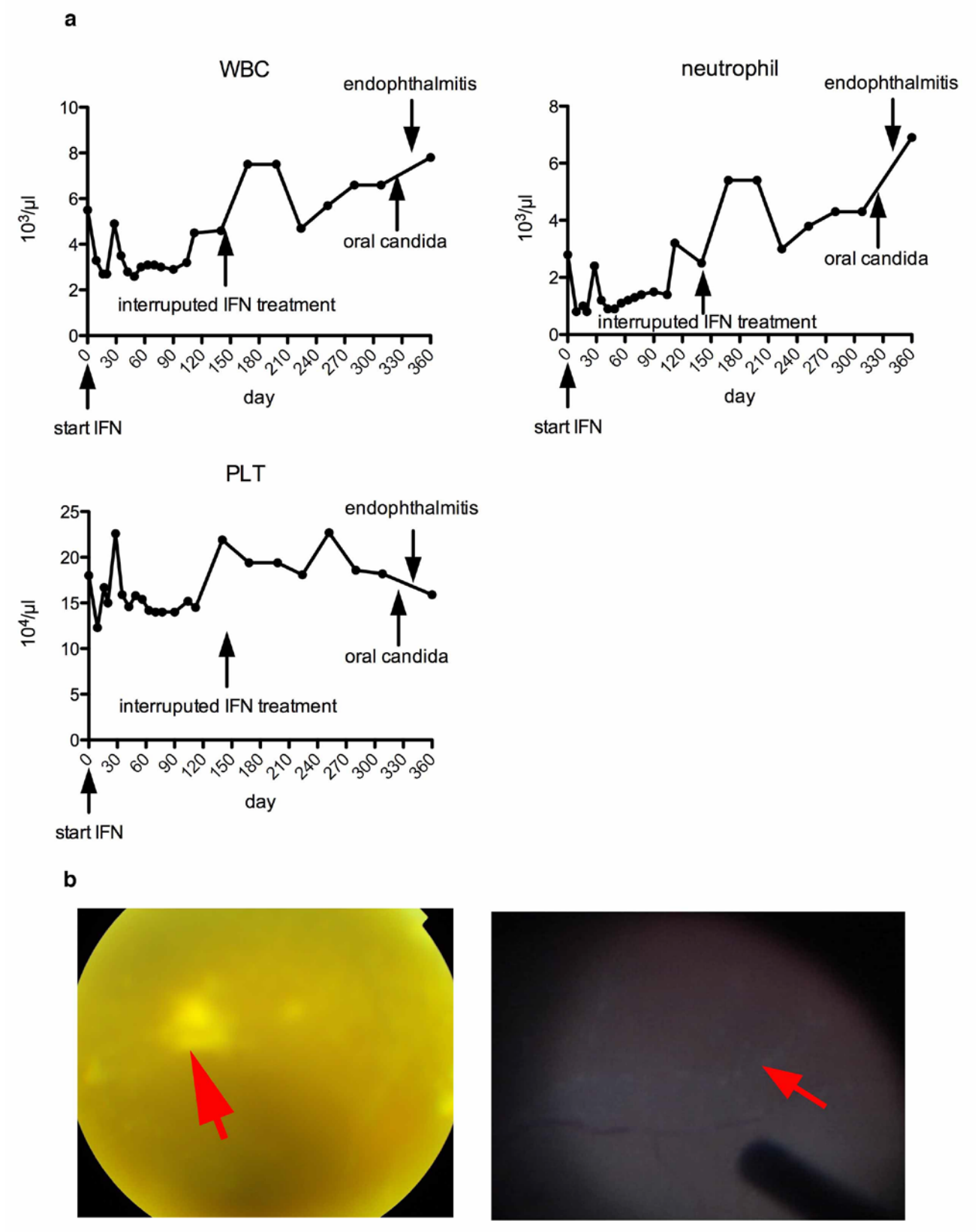

Figure 1: