



## "LIPOMATOUS LESION PRESENTING AS A "BUFFALO HUMP": CONSIDER RETROVIRAL DISEASE!"

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### ABSTRACT

HIV associated lipodystrophy is a well-known complication and can present as lipohypertrophy or lipoatrophy. Along with issues of cosmesis and stigmatization, a principal concern that arises with lipodystrophy is a possible risk of accelerated atherosclerosis.

In the present report we studied the dorsocervical swellings in HIV infected patients by cytological examination and analysed the patient characteristics and treatment details with regards to the swelling. Presence of a dorsocervical swelling should prompt one to elicit history of retroviral disease and antiretroviral therapy in the patient. Conversely, nape of neck swelling occurring in HIV infected patients is most likely to be benign lipomatous lesion.

**KEYWORDS** : Dorsocervical, Buffalo Hump, Hiv, Antiretroviral Treatment, Cytology.

**INTRODUCTION:** Development of combined antiretroviral therapies represents a significant advance in treatment of HIV infection. Treatment with combination of at least three drugs has been the standard protocol for HIV patients since 1996.<sup>(1)</sup> Currently antiretroviral treatment guidelines recommend ARV regimens containing Non nucleoside reverse transcriptase inhibitors (NNRTIs) or Protease inhibitors (PIs).<sup>(2)</sup> Use of highly active antiretroviral therapies (HAART) has led to significant morbidity and mortality. On the other hand widespread use of these drugs is associated with recognition of unusual adverse effects, one of them being Lipodystrophy syndrome.<sup>(1)</sup> Lipodystrophy affecting HIV patients on treatment was first described in 1999.<sup>(3)</sup> It includes alteration in body fat distribution as well as altered lipid and carbohydrate metabolism. Morphological changes include accumulation of central fat and/or loss of peripheral fat (lipoatrophy).<sup>(4)</sup>

**MATERIALS AND METHODS:** The present study was a prospective study over a period of one and half year. All HIV positive patients who came to our cytology OPD during this period with a dorsocervical swelling were included. HIV positive patients with swelling at any other site and HIV negative patients irrespective of the site of swelling were excluded. Patients on steroids and those with any other concurrent medical condition were also excluded. The patient characteristics were studied with respect to the age, sex, type and duration of swelling and treatment detail. Local examination of the selected cases was noted. FNAC was performed using a 23G needle connected to a 10 ml plastic disposable syringe. 2 smears were performed of each case, one wet fixed and stained with Papanicolaou stain, the other one was air dried and stained with May Grunwald Giemsa.

**RESULTS:** Total 11 cases formed the sample after applying the selection criteria. The age of these patients ranged from 27 to 65 years, the average being 44.2 years. 10 of the 11 patients were females and last one was male, who were already diagnosed to be HIV positive and were on antiretroviral treatment (ART) for a variable period. The duration of treatment ranged from 4yrs to 8yrs, mean being 6.2 years. The drugs taken in all cases were Nevirapine [nonNucleoside analog reverse transcriptase inhibitors (nNRTIs)] and Zidovudine and Lamivudine [Nucleoside analog reverse transcriptase inhibitors (NRTIs)].

On local examination the swellings were diffuse, soft, non mobile, non tender, with normal overlying skin and ranged in size from 6x5x3 cms to 10x8x6cms in size [Fig 1]. Microscopically the smears from all 11 cases showed numerous clusters of mature adipose tissue suggestive of benign lipomatous lesion [Fig 2a & 2b].

**DISCUSSION:** Accumulation of dorsocervical fat or a "buffalo hump (BH)" is a well described manifestation of HIV associated lipodystrophy.<sup>(6,7)</sup> BH is reported in 2-13% of HIV infected patients with higher prevalence (6-13%) in those showing other features of lipodystrophy syndrome.<sup>(3)</sup>

Multiple studies have been attempted to understand the pathogenesis responsible for this condition better though no precise mechanism has yet been determined.<sup>(7)</sup> Current data indicate etiology of HIV associated buffalo hump remains elusive but is likely to be multifactorial and includes metabolic disorders, genetic factors, receipt of ART and HIV infection itself.<sup>(3)</sup> Protease inhibitors have been associated with fat accumulation and NRTIs have been associated with fat loss (lipoatrophy).<sup>(8)</sup> Lipodystrophy is almost exclusive to patients receiving antiretroviral therapy and has not been observed in patients with long term nonprogressive HIV infection.<sup>(4)</sup> This was consistent with the observation in our study. Common causes for buffalo hump in patients without HIV infection includes Cushing's syndrome and Cushing's disease. In our study we have not studied serum cortisol levels in our patients. Moreover relative scarcity of facial fat and clinical history can help to differentiate Cushing's syndrome which has a characteristic moon face.<sup>(9)</sup> Three patients in our study showed a characteristic loss of facial fat (Fig 3).

Except for one male, rest all the patients in our study were females indicating that females are at higher risk of developing buffalo hump during ART than males. This was similar to the observation made by few studies in the past. Previous studies of PI treated patients and PI naive patients receiving 2 NRTIs have shown that fat accumulation is always significantly more frequent in women whereas risk of pure atrophy is less than or not significantly different from that of men.<sup>(10)</sup>

Over the period of one and half year we had 54 cases of HIV patients who came to our cytology OPD. Of these thirty eight patients were males and sixteen were females. All except one male patient had come with swellings other than dorsocervical swellings, mostly with a cervical lymphadenopathy. Conversely of the sixteen female patients, eleven females came with a buffalo hump. We also had two non HIV infected male patients who came with dorsocervical swelling. However the swellings in these two cases were more circumscribed, well-delimited and round adipose tissue masses [Fig 4].

It is important to recognize and treat this condition as it has a significant psychological impact on the affected patients, both in

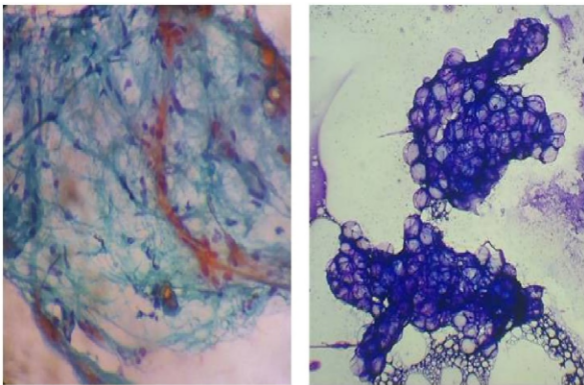
servicing as a visible reminder of the disease and in association with social stigma of HIV infection.<sup>(7)</sup> Though associated with recurrence, surgical resection has been the treatment of choice. However there is one case report on nonsurgical reduction of buffalo hump where the author has used aqueous microgelatinous solution which induces adipocytolysis. This seems to be safe and effective way to reduce hypertrophied dorsocervical pad of fat.<sup>(7)</sup>

Clinical significance of this entity is that of an increased risk in coronary artery disease in patients with few or no risk factors for the same. Buffalo hump lesions can be considered as a marker for good compliance to antiretroviral therapy.

**Legends for Images**



**Fig 1. Photograph of two patients of our study with the buffalo hump (circled). [anterior and lateral view]**



**Fig 2(a). Photomicrograph of a smear from aspirate of a buffalo hump showing clusters of mature adipose tissue [Pap stain (400X)]**



**Fig3. Photograph of one of our patient to highlight the characteristic loss of facial fat.**



**Fig 4. Photograph of a non HIV infected male patient with a rounded well delineated nape of neck swelling (circled) unlike the buffalo hump of HIV positive patients of our study. [anterior and lateral view]**

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