

Clinical Profile of Cutaneous Tuberculosis in a Tertiary Care Teaching Hospital in Eastern Bihar

Pranab Kumar Saha¹, Kumar Satya Prakash²

ABSTRACT

Introduction: Cutaneous tuberculosis is an important infectious public health problem in India. The increasing incidence of cutaneous tuberculosis is a marker of active transmission of the disease in the community. The present study was done to report the clinical pattern and types of cutaneous tuberculosis, and atypical presentations if any in all the clinically suspected cutaneous tuberculosis patients attending the dermatology OPD of MGM Medical College & LSK Hospital, Kishanganj, Bihar in one year study duration.

Material and methods: All the clinically suspected cutaneous tuberculosis patients attending the dermatology OPD of MGM Medical College & LSK Hospital, Kishanganj, Bihar in one year duration were studied to find out the clinical pattern of cutaneous tuberculosis. Selected cases have been subjected to various investigations including histopathological study.

Results: Out of total 15107 patients attending dermatology OPD, 28 (0.19%) patients were proven to be cutaneous tuberculosis. Male to female ratio was 3:4. Commonest type was lupus vulgaris (42.85%), followed by scrofuloderma (28.57%), erythema nodosum (10.71%), lichen scrofulosorum (7.14%), tuberculosis verrucosa cutis (7.14%) and paulonecrotic tuberculide (3.57%). In this study most of cases were young adults, the youngest was 5 year old boy and the oldest was 85 years elderly lady. Limbs and face involvement was the commonest presentation, followed by involvement of neck. Five patients had systemic involvement. All the cases responded well to standard short course anti-tubercular treatment.

Conclusion: Cutaneous tuberculosis continues to be a significant medical problem even with the advent of highly effective anti-tuberculous drugs. Proper and meticulous clinical evaluation and relevant investigations to pin-point associated systemic focus is advocated as the latter has an impact on the duration of treatment.

Keywords: Cutaneous tuberculosis, Clinical Presentation, Kishanganj, Bihar

tuberculosis has gained medical and managerial importance.² Cutaneous tuberculosis is a relatively uncommon. It is comprising 1-1.5% of all extra-pulmonary tuberculosis manifestations, which manifests only in 8.4-13.7% of all tuberculosis cases.³ The main etiological agent of the cutaneous tuberculosis is mycobacterium tuberculosis and occasionally *M. bovis* or BCG vaccine administration (an attenuated strain of *M. bovis*).⁴ Cutaneous tuberculosis can be acquired via hematogenous or lymphatic spread of a pulmonary focus or by direct inoculation. Cutaneous tuberculosis exhibits diverse clinical manifestations: inflammatory papules, verrucous plaques, suppurative nodules, chronic ulcers, and other atypical lesions.⁵

Present days, due to increase use of immunosuppressants (corticosteroid and anticancer chemotherapy) and emergence of immunocompromised host, it has been noticed and reported how the position of cutaneous tuberculosis is being altered. Cutaneous lesions may be composed of papules, nodules, plaques, ulcer, verrucous lesions, papilomatous growths, or cicatricial infiltrations.¹ There is paucity of studies in this region, and its wide range of variations in morphology, histology and treatment response prompted us to undertake this study. The prevalence of cutaneous tuberculosis varies from 0.18 – 0.26% in various studies.⁶

Cutaneous TB constitutes about 1.5% of all extra pulmonary tuberculosis. Its prevalence in children varies from 18 to 54% in India. There is no gender predilection and the infection occurs with increased frequency in 10-14 year age group. Intra-familial source of TB has been observed very frequently.⁷ Protective efficacy of BCG is still debatable and not yet fully defined. Of all the clinical types, scrofuloderma (SFD) is the most commonly encountered variant followed by lupus vulgaris (LV) and tuberculosis verrucosa cutis

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(TBVC). Lichen scrofulosorum (LS) is generally found to be associated with systemic TB focus in about 72% of cases.⁷ Presumptive diagnosis can be done by histopathological examinations. In histopathology, the acute neutrophilic inflammatory reaction proliferative in AFB and necrotic areas are usually noticed.⁸ Sequentially, the lesion acquires a granulomatous form with enlarged giant cells after 3 to 6 weeks with the reduced number of bacilli.⁹

Results of histological investigations are not characteristic of tuberculosis in the early stage. It was observed that tubercular granuloma does develop later with multinucleated giant cells and epithelioid cells. Caseous necrosis is usually seen in later stages.¹⁰ The diagnosis of cutaneous TB is based on the characteristic clinical morphology of the lesions as well as laboratory tests. Common clinical differential diagnoses of cutaneous or skin TB include cutaneous leishmaniasis, leprosy, atypical mycobacterial infections, fungal infections like chromomycosis and sporotrichosis and sarcoidosis. Many of these above conditions also show granulomas on histology. Thus definitive diagnosis relies on the direct demonstration of tubercle AFB on stained smears or biopsies, isolation by culture or detection by PCR and related molecular techniques.⁷

The present study was done to report the clinical pattern and types of cutaneous tuberculosis, and atypical presentations if any in all the clinically suspected cutaneous tuberculosis patients attending the dermatology OPD of MGM Medical College & LSK Hospital, Kishanganj, Bihar in one year study duration.

MATERIAL AND METHODS

In the present study we had included clinically suspected cutaneous tuberculosis patients attending dermatology OPD in MGM Medical College & LSK Hospital, Kishanganj, Bihar in one year duration. Institutional ethics committee permission was taken before enrolment of study participants. Individual informed consent was also taken. Selected cases have been subjected to a thorough clinical examination followed by various investigations viz., Blood for total leukocyte count, differential count, ESR, LFT, HIV screening test, Chest PA view, and Mantoux test. Histopathological study was performed in all the cases. FNAC were done in selected cases where Scrofuloderma was suspected. Various clinico-epidemiological presentations of these cases were observed and analyzed. Qualitative data were expressed in percentage and quantitative in mean \pm SD.

RESULTS

Out of total 15107 patients attending dermatology OPD, 28 (0.19%) patients were proven to be cutaneous tuberculosis. Male to female ratio was 3:4. In our study commonest type was lupus vulgaris 42.85%, followed by scrofuloderma 28.57%, erythema nodosum 10.71%, lichen scrofulosorum 7.14%, tuberculosis verrucosa cutis 7.14% and paulonecrotic tuberculide 3.57%. In our study most of cases were young adults (Table 1, Fig. 1a, 1b) between 11 to 40 years (71.4%), the youngest was 5 year old boy and the oldest was 85



Figure-1: (a): Tuberculosis Verrucosa Curtis over hand; (b): Lupus Vulgaris

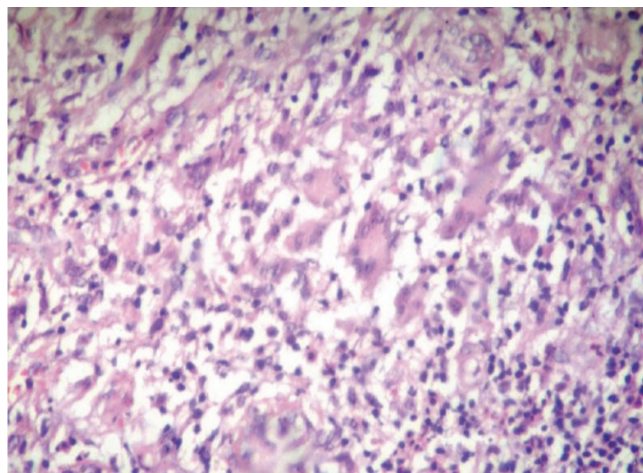


Figure-2: Histopathology of lupus vulgaris [H & E, 100X]. Epithelioid cell granulomas with Langerhans type giant cells seen in the mid dermis. Mixed inflammatory infiltrate is seen in papillary dermis.

years elderly lady. Limbs and face involvement was the commonest presentation, followed by involvement of neck and buttocks. Majority of the patients (71.43%) presented with single lesion, the rest (10.71%) had involvement of multiple sites (Table 2). Lymph node involvement was present in 8 (28.57%) cases; pulmonary tuberculosis was present in 4 (14.29%) cases and bone involvement in one (3.57%) case. Histopathology (fig.2) was consistent with cutaneous tuberculosis in 24 (85.71%) cases and Mantoux test was positive in 6 (21.43%) cases. Screening test for HIV is negative in all the cases in present study.

DISCUSSION

In the present study out of total 15107 patients attending dermatology OPD, 28 (0.19%) patients were proven to be cutaneous tuberculosis. Male to female ratio was 3:4. In our study commonest type was lupus vulgaris (42.85%), followed by scrofuloderma (28.57%), erythema nodosum (10.71%), lichen scrofulosorum (7.14%), tuberculosis verrucosa cutis (7.14%) and paulonecrotic tuberculide (3.57%). The prevalence of cutaneous tuberculosis was 0.19%, which was slightly less than that was noticed by 0.26 Patra AC⁶, and 0.21% by Acharya KM¹. Males (57.2%) predominated over females (42.8%), similar to (71.6% vs 28.4%) that was seen by Kumar B.¹¹

Majority of the cases (64.3%) were below 30 years of age

which is similar to that was noted by Patra AC⁶ 61.52% in between the age of 5 to 25 years of age. Lupus vulgaris (71.4%) was the commonest type of disease pattern which is slightly less than that was noted by Kumar B¹¹ (81.8%) and Singh G¹² (74%), but higher as (57.7%) was noted by Patra AC⁶. The second most common type was scrofuloderma (21.4%) followed by tuberculosis verrucosa cutis (7.2%) similar to that noted by Patra AC⁶. The commonest site of cutaneous tuberculosis varied from study to study, in our study upper limb (42.8%) involvement was commonest, similar to that noted by Patra AC⁶, while Kumar B¹¹ noted face as a commonest site. Systemic involvement was noted in 14.3% which was less than 32% noted by Acharya KM¹. The prevalence of cutaneous tuberculosis in present study was 0.19%. Similar findings had been observed in other studies like 0.24% by Satyanarayan¹³, 0.28% by Pandhi *et al*¹⁴ but differed to an extent from some reports like 0.5% by Banerjee BN¹⁵ and 0.59% by G Singh¹².

The commonest site of cutaneous tuberculosis varied from study to study. Lower limbs in the commonest site our study but face in a study from West¹⁶ and also one from North India¹¹. Single lesion of a particular type of cutaneous tuberculosis was seen in most cases without immunocompromise. Study shown that all patients (100%) were from low-socioeconomic condition.¹¹

Scrofuloderma is the most common form of skin TB in childhood in India, whereas, lupus vulgaris is the most common form in adults.¹⁷ The initial lesion is a brownish red, soft or friable macule or papule with a smooth or hyperkeratotic surface. On diascopy the infiltrate exhibits a typical apple jelly color.¹⁸

CONCLUSION

There are varied presentations of cutaneous tuberculosis and chances of dissemination to other organs; it is very important to diagnose and treat the patient at the earliest possible. Cutaneous tuberculosis is multifaceted by its presentations. High clinical suspicion is necessary in rare pre-presentations.

Coexistence of two or more morphological patterns can occur. In doubtful cases, 5-6 weeks of therapeutic trial helps. The present study was done to create some awareness amongst the young dermatologists.

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