

Otorhinolaryngology-related tuberculosis

La tubercolosi di interesse otorinolaringoiatrico

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Key words

Tuberculosis • ENT localizations

Parole chiave

Tubercolosi • Localizzazioni ORL

Summary

Data from personal case histories, from 1984 to 2000 inclusive, are reported in order to contribute to a better understanding of some of the clinical and epidemiological ENT associated TB aspects. Analysis of these data shows that: 1. Like the pulmonary form, ENT localizations are increasing due to the traditional risk factors (immigration, poverty, immunodeficiency, drug addiction). 2. They are generally clinically primitive forms (which are found in extrapulmonary regions as the first expression of tubercular disease) and typically affect young people with a slight prevalence among females. Lymph gland localizations are the most frequent.

Riassunto

Gli Autori, al fine di portare un contributo ad alcuni aspetti clinico-epidemiologici della tubercolosi di interesse otorinolaringoiatrico, riportano i dati della loro casistica dal 1984 a tutto il 2000. La lettura e l'analisi di questi dati evidenzia che: 1. analogamente alla forma polmonare, anche le localizzazioni ORL sono di nuovo in incremento in relazione ai soliti fattori di rischio (immigrazione, povertà, immunodeficienza, tossicodipendenza); 2. si tratta in genere di forme clinicamente primitive (che si presentano in sede extrapulmonare quale prima espressione clinica di malattia tubercolare), interessano un'età tipicamente giovanile con lieve prevalenza per il sesso femminile. Le localizzazioni linfoghiandolari sono sicuramente le più frequenti.

Introduction

The introduction and the improvement in antitubercular chemotherapy determined a decrease in the incidence of tuberculosis (TB) – pulmonary and extrapulmonary – in industrialized countries until the early 1980s, when an alarming turnaround was observed. The phenomenon of immigration, the spread of HIV infection, drug addiction and the outbreak of strains of multiresistant mycobacteria may explain this change in epidemiology¹⁻³.

Recent studies indicate that extrapulmonary TB represents approximately 25% of overall tubercular morbidity⁴.

The extrapulmonary form of TB has been classified, at anatomical and clinical level, into three types^{5,6}:

1. Clinically primitive: processes which appear in extrapulmonary regions as the first clinical expression of tubercular disease, completely lacking in any previous morbid outbreak in the pulmonary area;
2. Clinically secondary: extrapulmonary morbid conditions, either in the short- or long-term, following clinically overt pulmonary processes;
3. Late phenomena of earlier tubercular processes either ignored, or remaining latent or previously occurring in a more or less manifest form.

Localizations of TB in cervico-cephalic regions are

among the most frequent and have been arousing increasing interest on account of the clinical metamorphosis which has occurred over the last few years⁷. Indeed, today we rarely observe forms with an acute or rapidly progressive course, while slowly-evolving sub-clinical patterns are frequent^{8,9}.

In order to contribute to a better understanding of the clinical and epidemiological aspects of ENT-related TB, we have collected data from cases admitted to the "Monaldi" Hospital in Naples (regional reference hospital for TB diseases) from January 1984 to December 2000. The primary aim was to assess the exact incidence and the current clinical pictures of this phenomenon, diagnosis of which is sometimes difficult and often underestimated.

Patients and Methods

Of the 1391 patients, 621 male, mean age 40.2 years (range 8-79), 770 female, mean age 38.5 years (range 10-80) admitted with extrapulmonary TB outbreaks to the "V. Monaldi" Hospital in Naples between 1984 and 2000, the present study focused attention on the 323 cases (23.2% – median age 16 years) presenting an ENT localization of TB. Data concerning sex, age and place of origin are outlined in Figures 1-3.

All the patients were submitted to:

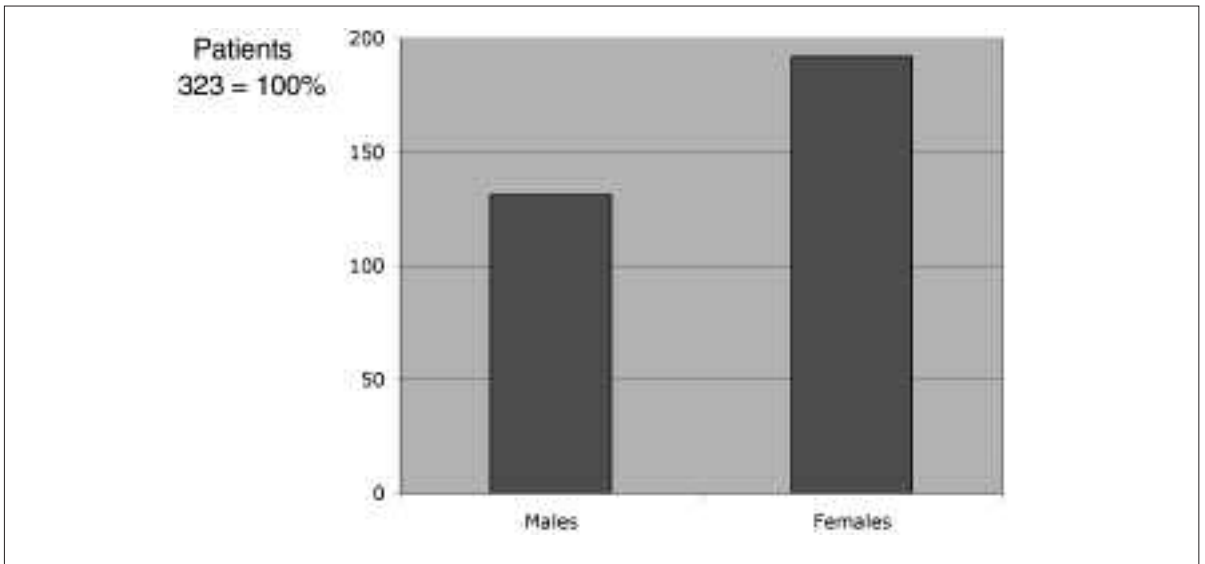


Fig. 1. Sex distribution.

- clinical assessment in which, after collecting the anamnesis and an effecting an objective ENT examination, attention was focused on symptoms such as asthenia, headache, pharyngoynia, fever, cough, hemoptysis, respiratory difficulties and signs including tenderness to palpation in the lympho-gland area;
- the following instrumental investigations:
 - chest X-ray;
 - detection of tuberculosis and/or atypical micobacterium both in sputum and other fluids;
 - serodiagnosis for a60 antigen with ELISA (enzyme-linked immunosorbent assay) methods (IgG and IgM antibodies);
 - fine-needle lymph-node cytology and/or histological test of biopsy tissue (larynx, tonsil, ear and nose).

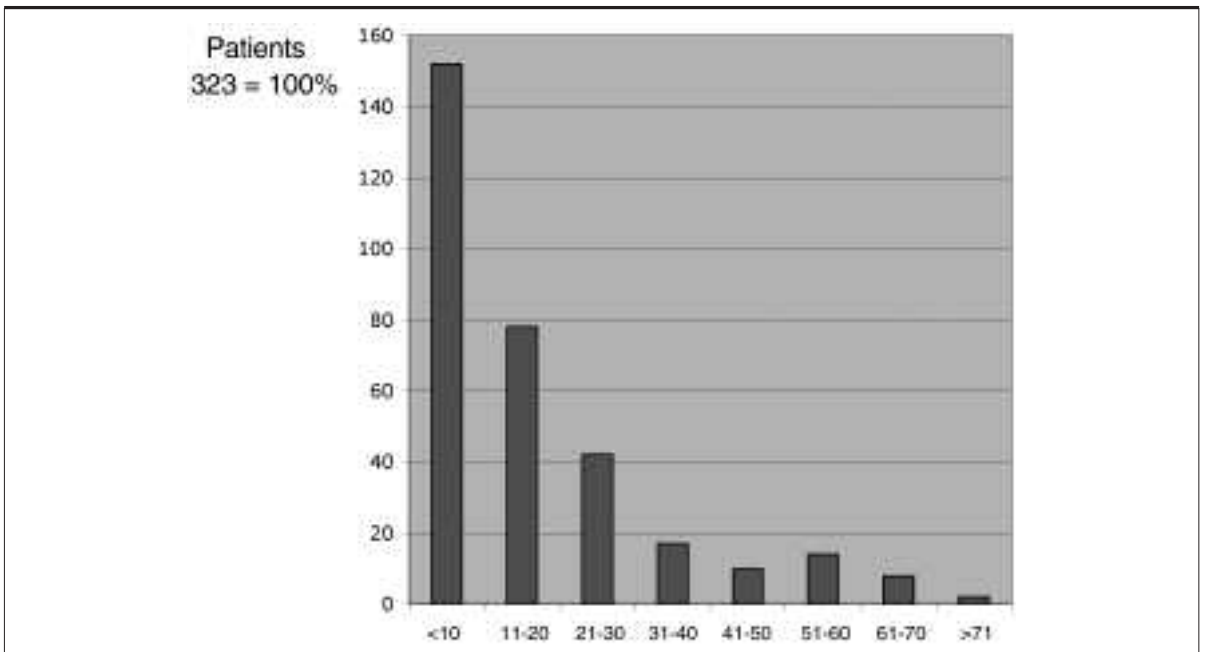


Fig. 2. Age distribution (years).

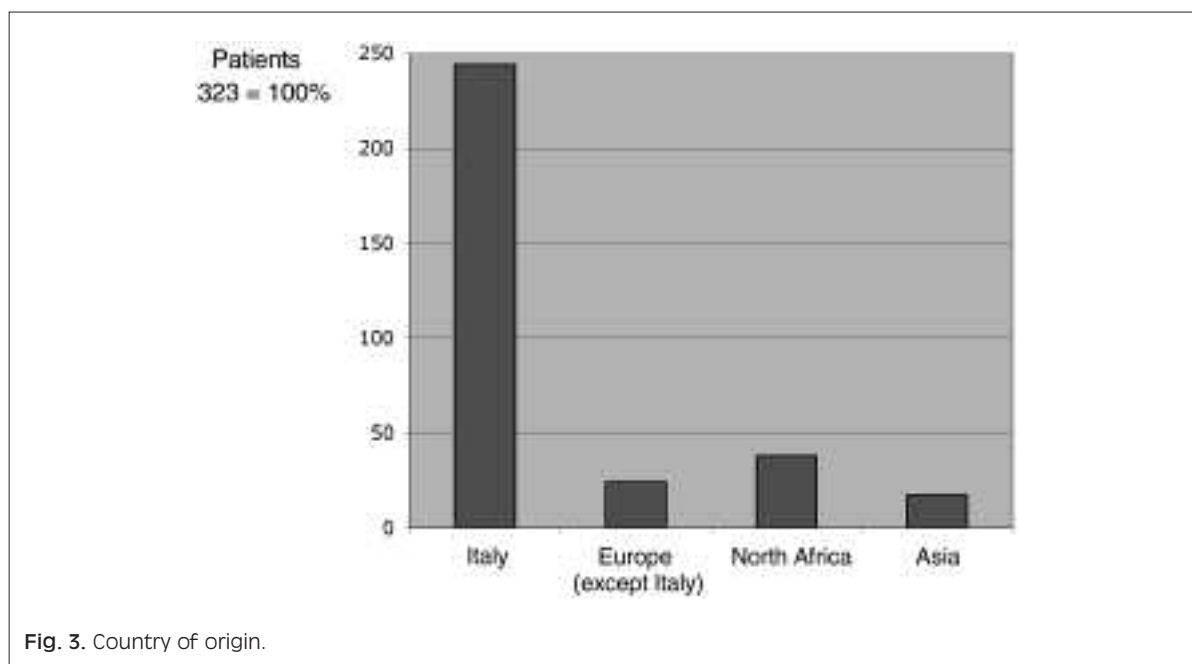


Fig. 3. Country of origin.

Results

LATERO-CERVICAL LYMPH GLAND TUBERCULOSIS

Of the 304 patients (94.12% of sample) mean age 16.5 years, 189 (62.2%) were female, 115 (37.8%) male. Chest X-ray in all examined cases were negative for pleuro-pulmonary tuberculous localizations. Search for Koch's bacillus (BK) in the sputum was negative in all cases. Adenopathy was monolateral in 189 (62.2%) patients, bilateral in 115 (37.8%). A single lymph gland was affected in 92 (30.3%) cases. The skin over the tumefaction was hyperaemic and infiltrated in 31 (10.2%) cases, presented a fistula in 6 (2%) and was normal in the remaining 267 (87.8%) cases. The clinical picture was asymptomatic in 90 patients (29.6%), sub-clinical in 161 (53%), symptomatic in 53 (17.4%). It is worth pointing out that 10 (3.3%) patients were HIV+, all symptomatic.

A total of 106 patients (34.86%) have been submitted only to medical treatment according to the follow polychemotherapy protocol:

- 1) isoniazide (5 mg/kg/day) for 6 months;
- 2) rifampicine (10 mg/kg/day) for 6 months;
- 3) ethambutol (15 mg/kg/day) for 2 months.

In 198 cases (65.13%), a different therapeutic protocol was followed:

- 1 week polychemotherapy with isoniazide, rifampicine and ethambutol;
- surgery (lymphadenectomy);
- 3-month polychemotherapy (with the same drugs);

- 3-month interruption;
- 3-month polychemotherapy (only with isoniazide and rifampicine).

Polychemotherapy has been repeated for two months, every year, for two years.

After two years, 287 patients (94.4%) no longer showed symptoms of the disease; 17 cases (5.6%) showed local recurrence, all patients were still alive.

LARYNGEAL TUBERCULOSIS

Laryngeal tuberculosis was present in 14 patients (4.33% of the whole sample) – 12 male (85.7%) and 2 female (14.3%), aged between 48 and 70 years (mean 58). The laryngeal localization was an expression of a post-primary form of TB in all cases and all presented pulmonary outbreak in active phase. All patients could be considered symptomatic, and suffered from deteriorating dysphonia and pharyngodynia together with clinical outbreaks related to the pul-

Table I. Site of TB extrapulmonary localizations.

Latero-cervical lymph gland	304 (94.12%)
Larynx	14 (4.33%)
Tonsil	2 (0.62%)
Oral cavity	1 (0.31%)
Middle ear	1 (0.31%)
Nose	1 (0.31%)
Total	323 (100%)

Table II. Two-year follow-up of TB extrapulmonary localizations.

Localization	NED	Local recurrence	Died
Latero-cervical lymph gland	287	17	0
Larynx	12	1	1
Tonsil	2	0	0
Oral cavity	1	0	0
Middle ear	0	0	1
Nose	0	0	1
Total	302 (93.5%)	18 (5.57%)	3 (0.93%)

monary localization. Laryngoscopy showed a large laryngeal lesion of the infiltrating ulcerous cancerous-like type, in all cases. None of the patients was HIV+. All patients have been submitted to medical treatment by using classic polychemotherapy (isoniazide, rifampicine and ethambutol); in 6 cases (42.9%), ethambutol has been substituted by pirazinamide (25 mg/kg/day).

Two-year follow-up shows a complete *restitutio ad integrum* in 12 cases (85.7%), one patient (7.1%) showed local recurrence and one patient (7.1%), diabetic, with an apex pulmonary localization, died of myocardial stroke.

TONSILLAR TUBERCULOSIS

Two cases (0.62% of whole sample – 1 male and 1 female) presented tonsillar tuberculosis: one patient, 54 years old, was suffering from a post-primary form with pulmonary outbreak in the active phase, involving the entire pharyngeal mucosa and was highly symptomatic; in the other, a 13-year-old, the primary localization involved the palatine tonsils with a sub-clinical picture similar to non-specific chronic tonsillitis. Neither of the patients was HIV+.

One patient has been submitted to classic polychemotherapy and in the other, medical treatment has been associated with tonsillectomy.

After 2 years, neither of these patients showed evidence of recurrence.

ORAL CAVITY TUBERCULOSIS

One (0.31%) oral cavity primary complex was found in a 10-year-old boy, with visceral confined nodular type focus localized on the cheek and the adenopathic focus in the latero-cervical lymph glands. This patient was HIV-.

The patient, treated with the routine polychemotherapy protocol, showed no local recurrence after 2 years.

MIDDLE EAR TUBERCULOSIS

One male patient (0.31% of whole sample), highly

symptomatic with ipsilateral facial paralysis, presented pulmonary TB in the active phase and was HIV+. The patient died after only 3 months of polychemotherapy due to pulmonary complications.

NASAL TUBERCULOSIS

One male patient (0.31%) presented pulmonary TB in the active phase and symptomatic form HIV+.

This patient also died after 4 months of polychemotherapy due to pulmonary infection.

Discussion and Conclusions

In keeping with reports in the international literature, our data confirm that extrapulmonary TB of ENT interest still represents an extremely important health problem^{4 7 10-15}; in the last few years, ENT TB has also shown an epidemiologic change, with a disconcerting turnaround as far as the traditional risk factors are concerned (immigration, poverty, immunodeficiency, drug addiction)¹.

Lymph gland localizations are the most frequent (94.12%); these are generally clinically primitive forms (present in extrapulmonary regions as the first clinical expression of tubercular disease) typically affecting young people.

In our sample, the cases of specific lymphadenitis were all clinically primitive forms; the age of onset was extremely young – median age 16.5 years and 62.2% of cases were female.

The frequent monolaterality of the condition must also be stressed, with 30.3% of cases in which only one lymph gland was affected.

Adenopathy was almost always mobile, non-infiltrating and indolent, since only in 12.2% of cases was an infiltrated and painful cutis reported. In this regard, it is worthwhile pointing out that the classical picture of lymphadenitis, with multiple localizations and rapid evolution towards colliquation and fistulization, is now extremely rare; compared with a few years ago, the disease expressions have changed con-

siderably and it is now very difficult to make a diagnosis on clinical evidence without histopathological crosschecking¹².

In most cases, the general clinical picture was not compromised, as in more than 80% of patients the condition was asymptomatic or sub-clinical.

HIV+ cases must be considered separately as they represented 3.3% of the whole sample with tubercular adenopathy. In fact, all were highly symptomatic, with a clinical picture, both general and local, similar to that found years ago.

Laryngeal TB is a pathological condition which still exists and which is very difficult to completely eradicate, mainly because there are still large numbers of pulmonary TB patients who, due either to late diagnosis, or inadequate treatment, are in chronic phases of the disease^{10 11 15}. This disease is, in fact, an exclusively post-primary one, and thus incidence is strictly related to pulmonary tuberculosis^{11 15}.

In our sample, laryngeal TB was present in a limited number of cases (4.33%) with a higher prevalence in males (85.7%); it was always an expression of a post-primary form: and, indeed, all the cases considered presented a pulmonary outbreak underway. Clinical outbreaks related to the pulmonary localization were prevalent in all cases and associated with deteriorating dysphonia and pharyngodynia.

None of the patients presented an ulcerative laryngoscopic picture with erosion or amputation of the

epiglottis, as in past years, but, in all cases, a tumoural-like laryngeal infiltration was found and, therefore, it is undoubtedly difficult, today to suspect a specific laryngeal lesion within a normal pleuropulmonary picture, and a definite diagnosis can be made only after biopsy.

Primary oral cavity and tonsillar localizations appeared to be rare but extremely interesting, especially since, in past times, these forms were typically post-primary cases. Specific post-primary oral cavity, tonsillar and nasal cavity lesions now occur very rarely. Unlike published surveys, we did not observe any TB cases of the parotid or submandibular gland¹⁶.

The therapeutic protocol received by patients under our analysis^{17 18} had given good results also when associated with surgical treatment, as in the case of latero-cervical or tonsillar localizations.

Of the 323 patients, 3 (0.93%) were lost at follow-up either due to death from other causes (one patient with laryngeal localization of myocardial stroke and 2 patients due to pulmonary infection (one with middle ear TB the other with nasal localization, both HIV+). In a 2-year follow-up, we observed 18 patients (5.57%) with local recurrence (17 with laterocervical localization and one with a laryngeal lesion) who were retreated successfully with the same therapeutic protocol.

The remaining 302 patients (93.5%) showed no local recurrence.

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