

Caso
clinico

Case
report

***Chlamydia trachomatis* conjunctivitis in a male teenager: a case report**

Congiuntivite da Chlamydia trachomatis in un adolescente maschio: descrizione di un caso

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■ INTRODUCTION

C*hlamydia trachomatis* is the most common cause of sexually transmitted bacterial infection in Europe and the US, with a rising trend over the last few years [1, 2].

Prevalence rates differ widely according to population groups but are generally higher among young individuals aged 15 to 24 years [3-5].

According to the literature, ocular localizations of *C. trachomatis* are typically observed among neonates and infants who acquire the infection while passing through the birth canal [6, 7]. However, it should be noticed that chlamydial conjunctivitis may also occur in adolescents following a genital infection.

Clinical features are unspecific and of little help for etiologic orientation of the causing agent, hence misdiagnosis frequently occurs. Delayed diagnosis is of concern for its public health implications as well as for the consequences for the affected patient.

We present a case of *Chlamydia trachomatis* conjunctivitis observed in a sexually active male teenager which highlights the diagnostic challenge of this condition.

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■ CASE REPORT

An 18-year-old Italian man was found to have a *C. trachomatis* genital infection in the context of a prevalence survey involving high school students (aged 18 or older), conducted in the province of Brescia (Northern Italy) between 2012 and 2013 [8]. The patient was referred to the Sexually Transmitted Infections (STI) clinic on December 11th 2012 for counseling and treatment. The medical history was unremarkable. The patient denied previous STIs and no past or current urethral symptoms were reported. He reported unprotected sexual intercourse with 6 female sexual partners in the previous 6 months.

Since October 2012, the patient presented conjunctival hyperemia, increased tearing, itching, and mucopurulent secretion, predominantly on the left eye, with uncompromised visual acuity. He had consulted the Emergency Department on November 29th 2012, when catarrhal conjunctivitis was diagnosed and treated with topical anti-inflammatory, anti-allergic and decongestant drugs. Because of incomplete clinical response after 8 days, a follow-up ophthalmological evaluation was performed, which identified follicular conjunctivitis and lower superficial punctate keratitis (left eye > right eye) without mucopurulent secretions. Sodium cromoglycate and hyaluronic acid eye drops were prescribed.

Four days later, at the time of examination at the STI clinic, chlamydial conjunctivitis was suspected and a conjunctival scraping of the left eye was performed. On the same day the patient was administered supervised treatment with azithromycin 1 g single dose orally; serologic tests for HIV and syphilis were performed with negative results. *C. trachomatis* was detected in the conjunctival scraping by a molecular test (VERSANT[®] CT/GC DNA 1.0 Assay kPCR; Siemens AG). In the light of this finding, a tetracycline/betamethasone eye ointment for one month was also prescribed.

The patient experienced progressive, though slow, improvement of ocular symptoms following etiologic treatment: bilateral conjunctival hyperemia and lower follicular hypertrophy were still present four weeks after treatment, and mild conjunctival hyperemia persisted on the right eye for approximately eight weeks. However, a new conjunctival scraping performed on both eyes 4 weeks after treatment resulted negative for *C. trachomatis*. A complete resolution of symptoms was achieved three months after treatment for chlamydial infection.

■ DISCUSSION

Our case highlights the need to include *C. trachomatis* infection in the differential diagnosis of sexually active adolescents presenting with acute or chronic follicular conjunctivitis [9]. Unrecognized, chlamydial conjunctivitis presents a chronic progression. In addition to individual ocular morbidity, it should be noted that *C. trachomatis* conjunctivitis is generally associated with genital infection, which does represent a public health issue.

C. trachomatis is traditionally classified into at least 15 main serovars which display well-documented and unique tropisms for specific tissues, including the ocular epithelia [10-13]. Serovars A-C specifically infect the ocular mucosa causing trachoma, which is responsible for over 40 million cases of active infection and 1.2 million cases of blindness worldwide [14]. Serovars D-K of *C. trachomatis* cause genital infections and are the most frequently diagnosed sexually transmitted bacterial infection worldwide, with more than 98 million cases occurring each year [15]. These serovars may also result in inclusion conjunctivitis, a sexually transmitted disease that generally follows auto-inoculation

from contaminated genital secretions [16].

Classically, chlamydial conjunctivitis affects initially one eye and the incubation period varies from 4 to 12 days. The symptoms may be acute or subacute with bulbar conjunctival hyperaemia, irritation and mucopurulent discharge. A follicular reaction of tarsal conjunctiva and a superior papillary reaction are typically associated with chlamydial conjunctivitis. The cornea may have a mild or moderate superficial punctate keratitis and peripheral epithelial or subepithelial infiltrates may occur. Occasionally, it can cause superior corneal pannus, corneal ulceration and iritis. More commonly, patients have mild symptoms for weeks to months, despite treatment with topical antibiotics which have no effect on *C. trachomatis*.

Aetiology is usually defined only in the chronic stage since no pathognomonic signs or symptoms are associated to this condition and a high level of suspicion is required to make the etiologic diagnosis. Ocular samples from conjunctival scraping should be tested using highly sensitive and specific assays: Nucleic Acid Amplification Tests (NAATs) are currently recommended as the first diagnostic choice [17]. Since the bacterial load is usually limited in the eye, non-molecular assays are not recommended for the diagnosis of chlamydial conjunctivitis due to their lower sensitivity.

Treatment of adult chlamydial conjunctivitis does not differ from that of uncomplicated genital infections; topical therapy alone is not effective [18]. The recommended therapeutic regimen is a single 1 g oral dose of azithromycin. As an alternative, a 7-day course of doxycycline 100 mg twice a day can also be given, though adherence to this regimen may be an issue. A 7 day course of erythromycin base 500 mg four times a day, erythromycin ethylsuccinate 800 mg four times a day or ofloxacin 300 mg orally twice a day can also be used to cure the infection, but these regimens have lower tolerability [17]. In summary, we consider that ocular manifestations associated with *C. trachomatis* genital infection may be more common than currently reported; this condition is likely to be underdiagnosed due to a low awareness among care givers and patients.

Although the clinical significance of ocular infection may be limited, undiagnosed chlamydial genital infections represent a public health problem, as late diagnosis of genital infection results in continuous transmission to sexual partners and possible progression to severe

genital *sequelae* [19]. Whenever diagnosed, chlamydial conjunctivitis should prompt for screening of genital disease and other STIs such as HIV, viral hepatitis, gonorrhoea, and syphilis.

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Keywords: *Chlamydia trachomatis*, Sexually Transmitted Infections (STIs), conjunctivitis, screening, adolescence.

SUMMARY

An 18-year-old man was seen at a Sexually Transmitted Infections (STIs) clinic for counselling and treatment of *Chlamydia trachomatis* genital infection which had been diagnosed during a screening survey of high-school students. For two months he had reported conjunctival hyperaemia, increased tearing, itching, and mucopurulent secretions, predominantly on the left eye. His ophthalmologist had made a diagnosis of follicular conjunctivitis and lower superficial punctate keratitis (left eye > right eye), irresponsive to topical treatment.

Chlamydial conjunctivitis was suspected and confirmed by a positive nucleic acid amplification test (NAAT) performed on conjunctival scraping. The patient was treated with azithromycin 1 g single dose orally and tetracycline/betamethasone eye ointment for one month. A complete resolution of symptoms was observed three months after aetiological treatment. This case highlights the need to include *C. trachomatis* infection in the differential diagnosis of acute or chronic follicular conjunctivitis among sexually active young individuals.

RIASSUNTO

Un soggetto maschio di 18 anni giungeva all'ambulatorio di Malattie Sessualmente Trasmesse per counseling e trattamento di un'infezione genitale da Chlamydia trachomatis diagnosticata in occasione di un programma di screening rivolto agli studenti delle scuole superiori. Da circa due mesi lamentava iperemia congiuntivale, lacrimazione abbondante, prurito e secrezioni mucopurulente, prevalentemente a carico dell'occhio sinistro. L'oculista aveva posto diagnosi di congiuntivite follicolare e cheratite puntata inferiore superficiale (occhio sinistro > occhio destro), non responsive a trattamento topico. Si poneva quindi il sospetto di con-

giuntivite da Chlamydia, confermata dalla positività del test di amplificazione genica (NAAT, nucleic acid amplification test) condotto su scraping congiuntivale.

Il paziente veniva infine trattato con azitromicina 1 gr per os in dose unica e applicazione topica di tetraciclina/betametassone per un mese. La completa risoluzione della sintomatologia veniva osservata tre mesi dopo la terapia eziologica. Il caso descritto evidenzia la necessità di considerare l'infezione da C. trachomatis nella diagnosi differenziale della congiuntivite follicolare acuta o cronica nei giovani adulti sessualmente attivi.

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