

Acute haemorrhagic conjunctivitis: an epidemic in august/ September 2003

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Abstract:

Objective: To clinically analyze 400 cases of red eye attending Nepal Eye Hospital in August/ September 2003 and to study the aetiology of the disease on the clinical basis with available laboratory resources.

Materials and methods: It is a prospective study of 400 cases of acute conjunctivitis visiting Nepal Eye Hospital during the epidemic of acute haemorrhagic conjunctivitis in August/September 2003.

Result: 30.5% presented in the age group of 20-29 years. Males presented predominantly (73.3%). Maximum number of patients presented at two days of onset of symptoms. All 400 cases had red eye, 89.8% had pain, 86.3% had foreign body sensation and 87.5% had discharge. Bilateral involvement was seen in 73.5% and unilateral involvement in 26.5%, 4.3 % of the total cases had corneal involvement and 20% of the cases had associated fever and preauricular lymphadenopathy.

Conclusion: Based on clinical presentation and the report of available laboratory results, picorna virus was found to be responsible for this epidemic of acute haemorrhagic conjunctivitis.

Keywords: Haemorrhage, Conjunctivitis, Superficial Punctate Keratitis, Lymphadenopathy, Picorna virus.

Karl Linder was the first person to describe viral conjunctivitis with 13 papers between 1909 to 1913. He had described the disease as bilateral involvement with variable symptoms like hyperaemia, congestion, haemorrhage, follicles, corneal involvement and lymphadenopathy¹. Haemorrhagic conjunctivitis in an epidemic form was first described in 1969 in Ghana at the time when Apollo 11 spacecraft was launched, hence it is also known as Apollo conjunctivitis. It had a short incubation period of 24 hours and rapidly spreading to contra lateral eye of which 60% developed preauricular lymphadenopathy and haemorrhag². Since then many such outbreaks had occurred in many countries.

In Nepal, there had been 2 epidemics of acute haemorrhagic conjunctivitis in the past. However, the study of the disease has never been conducted. Recently in August/September 2003, similar outbreak of acute haemorrhage conjunctivitis was observed.

Objectives

Even though, three epidemics of acute haemorrhage conjunctivitis had already occurred, study has not been done as per the presenting symptoms, signs, associated features and probable causative agents. This study aims to do clinical analysis of acute haemorrhagic conjunctivitis, to find out the aetiology

of the disease or the clinical basis with available laboratory resources and study the association of the acute haemorrhagic conjunctivitis with fever and lymphadenopathy.

Materials and methods

During the epidemic of acute haemorrhagic conjunctivitis in August/September 2003, of the total 3123 cases attending Nepal Eye Hospital, 400 cases seen by the authors were included in the study and analyzed. It is a prospective study done in August/September 2003. Convenient sampling was done. Cases not under any topical antibiotic therapy were included in the study. Specially designed proforma was used to obtain required patient information and to record clinical findings. Patient variables like age and sex were recorded. History of presenting complaints and duration were noted. Similarly, history of fever was asked for. Visual acuity was tested with Snellen's chart. Patients were examined with torch light and slit lamp and fluorescein staining was done whenever necessary. Preauricular lymphadenopathy was checked in all cases.

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Gram staining and culture/sensitivity of the conjunctival swab was done in 40 cases (20 Gram staining and 20 culture/ sensitivity).

Results

Table 1. Distribution of patients by Age

		Frequency	Percent
Age	0-9	48	12.0
	10-19	67	16.8
	20-29	122	30.5
	30-39	97	24.2
	40-49	34	8.5
	50-59	20	5.0
	60-69	8	2.0
	>=70	4	1.0
	Total	400	100.0

The age of the patients at presentation ranged from 8 months to 80 years. However, most of the patients ranged between 20-29 years. (30.5%)

Table 2. Distribution of patients by Sex

		Frequency	Percent
Sex of Patient	Male	293	73.3
	Female	107	26.7
	Total	400	100.0

Males were mostly affected (73.3%) as compared to females (26.7).

Table 3. Distribution of patients by Presenting Symptoms

		Percent
Presenting Symptoms	Red Eye	400(100%)
	Pain	359(89.8%)
	Foreign body sensation	345(86.3%)
	Discharge	350(87.5%)

The commonest presenting symptom was red eye. (100%) followed by pain (89.8%), discharge (87.5%) and foreign body sensation (86.3%).

Table 4: Duration of symptoms

		Frequency	Percent
Duration of Symptoms in days	0	2	.5
	1	54	13.5
	2	192	48.0
	3	93	23.25
	4	37	9.25
	5	14	3.5
	6	4	1.0
	7	2	.5
	8	1	.25
	11	1	.25
	Total	400	100.0

The duration of presenting symptoms ranged from few hours to 11 days after the onset of symptoms with maximum presentation being at 2 days (48%).

Table 5. Unilateral/ Bilateral involvement

		Frequency	Percent
Eye Affected	Unilateral	106	26.5
	Bilateral	294	73.5
	Total	400	100.0

73.5% of cases had bilateral involvement and 26.5% had unilateral involvement.

Table 6. Conjunctival Discharge

		Percent
Conjunctival Discharge	Watery	80 (20%)
	Mucoid	67 (16.8%)
	Mucopurulent	213 (53.5%)
	Purulent	40 (10%)

On examination, all patients had conjunctival discharge with maximum patients having mucopurulent discharge (53.5%) followed by watery discharge (20%), mucoid discharge (16.8%) and purulent discharge (10%).

Table 7. Conjunctival signs

		Percent
Conjunctival signs	Conjunctival congestion	400 (100%)
	Subconjunctival haemorrhage	163 (40.3%)
	Follicles	126 (31.5%)
	Chemosis	42 (10.5%)

Conjunctival congestion was seen in all 400 cases and subconjunctival haemorrhage was noted in 40.3% while conjunctival follicles were seen in 31.5%, similarly, 10.5% of cases had chemosis. Only 17 cases had corneal involvement (superficial punctate keratitis). 20% of cases had preauricular lymphadenopathy and they also gave the history of fever.

No organism was isolated in gram staining and culture of conjunctival swab.

Discussion

The study shows that no age is immune to acute haemorrhagic conjunctivitis. However, the commonest age group being 20-29 years. A study done by Gillbert Smolins and Richard Thoft showed that children and young adults aged 5-21 years were most susceptible to haemorrhagic conjunctivitis³. The reason for involvement of younger people could be attributed to their exposure to crowded places⁴ as stated by M.D. Malision Richard A. Gunn and Milford Hatch et al. Though our study showed maximum male involvement (73.3%), Smolin and Thoft reported that females were slightly more affected (61%). The reason for males being affected more could be due to their working patterns and exposure to crowd.

As far as presenting symptoms are concerned, they are coincident with the typical symptoms of haemorrhagic conjunctivitis quoted in literature. Significant positive findings of our study are subconjunctival haemorrhage (petechial to extensive haemorrhage) is 40.3%, follicles 31.5%

Superficial punctate keratitis was seen in 4.3% and preauricular lymphadenopathy in 20%, as compared to 60% subconjunctival haemorrhage and lymphadenopathy described by Peyman, Sanders and Goldberg². However, Smolin and Thoft noted preauricular lymphadenopathy is 67% of the cases. Superficial punctate keratitis and preauricular lymphadenopathy may initially resemble acute epidemic keratoconjunctivitis caused by adenovirus type 8 and 19 but it has longer incubation period (about 8 days and last for 2 to 3 weeks).⁵ Gram staining of conjunctival swab did not reveal any organism and culture showed no growth.

Short incubation period, rapid and wide spread and epidemic form along with presenting signs and symptoms and absence of any bacterial growth in laboratory tests put the disease as acute haemorrhagic conjunctivitis³. The common viruses described in literature are adenovirus and enterovirus. However, we could not definitely distinguish between the two aetiological agents due to inadequate laboratory

facilities for viral isolation although all the clinical findings go in favour of picorna 70 virus.⁶ Epidemic haemorrhagic conjunctivitis is very infectious and poses a very potential problem of cross infection. Therefore prophylactic measures are very important. The disease is self-limiting with an average of 5 to 7 days' duration. However, broad-spectrum antibiotic eye-drop may be used to prevent secondary bacterial infections.

Conclusion

The epidemic of acute haemorrhagic conjunctivitis observed in August/ September 2003 was viral in origin, based on the literature review, clinical analysis of the cases and laboratory reports.

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