

Panophthalmitis due to *Pasteurella septica*

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Pasteurella septica rarely infects the human eye although it is commonly found as a pathogen in wounds caused by animals. Its incidence in wounds away from the eye has been reported more and more frequently over the past few years (DeBoer and Dumler, 1963). We record here a case of panophthalmitis due to *Pasteurella septica* which followed a perforating wound of the sclera. The wound was caused by a cat scratch and a rapid virulent infection followed with subsequent loss of the eye.

Case report

A girl aged 11 years was admitted to hospital on February 21, 1971, the same day that she suffered a cat scratch to the globe of the right eye. The visual acuity was 6/60 in the right eye and 6/9 in the left with correction.

Operation

A small scleral wound at the equator in the inferior temporal quadrant was sutured with dacron and at the same time a superficial lid laceration was sutured with black silk. A bead of vitreous was abscised from the wound in the sclera. 0.5 per cent. chloramphenicol drops were instilled hourly preoperatively and 6-hrly postoperatively. An intramuscular injection of Penidural was given in the operating theatre followed by a course of ampicillin syrup 125 mg. 4 times a day.

Course

On the first postoperative day the lids were swollen and there was some chemosis. The child subsequently developed an evening pyrexia and in spite of continued antibiotic treatment corneal oedema and hypopyon were noted on the fourth postoperative day, the vision being reduced to bare perception of light. At this stage the regional lymph nodes had become enlarged and tender. The treatment was changed to gutt. gentamycin hourly and gentamycin injections 0.8 ml. 8-hrly (40 mg./ml.). The appearance of the eye at this stage is shown in the Figure.



FIGURE *Appearance of the eye on the fourth day after injury despite the use of antibiotics*

In spite of the change in antibiotic treatment the condition of the eye continued to deteriorate and the patient's temperature continued to rise in the evenings. 16 days after the injury evisceration was performed; the temperature then gradually returned to normal and the patient was discharged 1 month after the injury.

Bacteriology

Swabs taken on admission and during the evisceration of the eye all yielded a heavy growth of *Pasteurella septica*, sensitive to penicillin, tetracycline, gentamycin, neomycin, framycetin, chloramphenicol, and colistin, on testing by the plate-diffusion method. Final identification and distinction from *Pasteurella pseudotuberculosis* and *Pasteurella pestis* were achieved by examining the appropriate fermentation reactions (Table).

Table *Biochemical and fermentation reactions of the isolated organism*

Lactose	—	Motility	—
Glucose	(+)	Indole	+
Mannitol	(+)	Oxidase	±
Dulcitate	—	Catalase	+
Sucrose	(+)	H ₂ S	—
Urea	—	McConkey	No growth

Discussion

Pasteurella septica (sometimes known as *Pasteurella multivida*) is usually seen as a small bipolar staining Gram-negative bacillus on microscopy of exudates from lesions or in films made from cultures. The organism closely resembles the plague bacillus and pasteurellosis in rats is very similar to human plague; a reliable distinction in this instance can in fact be made only after culture in the laboratory. *Pasteurella septica* has been isolated from the respiratory tract of a wide variety of animals and from the sputum of human patients with respiratory infections, but intraocular infections appear to be extremely rare. A search of the literature over the past 20 years has failed to reveal any reported cases and in the few earlier reports the identity of the organism is in doubt. The rarity of such an event may be due to the relative rarity of ocular trauma caused by animals. In this case a rapidly destructive infection developed despite the use of local and systemic agents indicated by laboratory sensitivity testing.

The action of antibiotics on *Pasteurella septica* was summarized by Carter and Bain (1960). In animal diseases sulphadimidine, chlortetracycline, and streptomycin have been used successfully. Penicillin is remarkably active *in vitro* but not *in vivo*. A case reported by Bain, Rountree, and Walker Smith (1961) did not respond to a short course of penicillin followed by a course of chloramphenicol but eventually responded to novobiocin and tetracycline. Torphy and Ray (1969) reported successful prophylaxis with penicillin in six cases of animal bites in children. However, in all these cases, the wounds were carefully cleaned at an early stage and although *Pasteurella septica* was isolated in all cases no sepsis occurred. Freigang and Elliott (1963) stated that the organism is known to persist in localized collections of pus despite penicillin therapy.

In the light of these rather varied reports, it is not possible to say which is the most suitable agent to use in the treatment of such patients; it is clear, however, that vigorous treatment

and careful observation are required. This one case presents a warning of the serious consequences that can follow injuries to the eye caused by animals.

Summary

A case of panophthalmitis due to *Pasteurella septica* is described. Attention is drawn to the virulent nature of the intraocular infection which in this instance was associated with a scleral perforation due to a cat scratch.

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