Bleeding from the conjunctiva

I. A. ABOUD AND L. S. HANNA

Department of Ophthalmology, Cairo University, and Department of Ophthalmology, Tanta Faculty of Medicine, Egypt

The discovery of frank bleeding from the conjunctiva, apart from injury, is a relatively rare condition, but it is not infrequent to find a sanguinous discharge in cases of severe inflammation of the conjunctiva.

The various causes of bleeding from the conjunctiva are vicarious menstruation, haemophilia, anaemia, jaundice, vascular tumours, bleeding from the lacrimal gland, regurgitation of blood from the nose through the lacrimal passages, and hysteria.

Spontaneous bleeding from the conjunctiva occurs in cases of vicarious menstruation, the weeping of "bloody tears" (*lacrimae cruentae*, *dacryohaemuhysis*: Duke-Elder, 1965); this is mainly of historical interest, extragenital haemorrhages taking place at periodic intervals corresponding to the menstrual cycle (Novak and Jones, 1961).

Vicarious menstruation from the eyes was recorded very early by Dodonaeus (1581) and Kersten (1841). Cases in which recurrent ocular haemorrhages can be correlated with menstrual somatic readjustment have been reported by Jüngken (1842), Mackenzie (1854), Pascal (1888), Greig and Kynoch (1912), Gabriélidès (1923), Greig (1932), Poos (1933), François (1934), Dejean (1934), Tóth (1944), and Polychronakos and Leanis (1956).

Haemophilia has been described by various authors, where bleeding from the eyes was initiated by a slight trauma, and was even fatal (Schmidt-Rimpler, 1887). Death from haemorrhage also followed the application of silver nitrate to the conjunctiva in the newborn (Müller, 1893; Abbe, 1899; Hansell, 1900; Wiener, 1903; Heal, 1928).

Other cases of alarming conjunctival bleeding were recorded in anaemic patients by Fischer (1832) and Cross (1891) and in a jaundiced patient by Havers (1964).

The presence of vascular tumours in the conjunctiva has been found to be a cause of conjunctival haemorrhage. Jessop (1895) recorded a patient in a state of collapse due to haemorrhage from an ulcerated angioma in the upper lid. Other cases have been reported by Mathieu (1894), de Micas (1908), Wallis (1916), James and Trevor (1918), Maxted (1919), White (1945), Bakker (1948), Ash (1950), and Nirankari and Singh (1961).

Conjunctival haemorrhage may arise in certain cases from the lacrimal gland (Lindemann, 1920), and from regurgitation of blood from the nose, through the lacrimal passages, issuing usually through the inferior punctum (Duke-Elder, 1965). It has been noted in epistaxis, either spontaneously (Jongkees, 1941), after nasal tamponage (Konikow, 1916; Messner, 1947), or after a nasal fracture (Valière-Valeix, 1939; Urbantschitsch, 1946).

The condition has also been seen in cases of hysteria (Huss, 1857; Damalix, 1882; Hynek, 1932,) and after gross disturbances of the autonomic nervous system (Bolotte and Fribourg-Blanc, 1931).

Conjunctival haemorrhage may also occur in healthy persons, with little or no cause apart from stooping (Perlia, 1888; Cross, 1891) or muscular effort (Denti, 1883); Minchin (1935) reported it in a child after copious weeping.

Case report

A girl aged 17 years came to the out-patients clinic of the Ophthalmic Hospital at Tanta, complaining of recurrent bleeding from the eyes. This had started 8 months previously, when blood had suddenly appeared in the eyes, in conjunction with the menstrual cycle. The conjunctival bleeding was at times so severe as to spill over from the lower lids and cover the cheeks, but usually the blood only streaked from the medial angles. Besides this cyclic conjunctival bleeding, the patient had also noticed 2 months ago, that sudden bleeding occurred when she was nervous or angry. The intercytic bleeding was not severe, amounting to only a few drops which at times occurred two or three times in a day. Epistaxis occasionally accompanied the conjunctival bleeding. The patient's normal tears were not tinged with blood. She had menstruated regularly since the age of 12.

There was a history of jaundice 1 year before, and of four epileptic fits in the previous 12 months. An appendectomy had been done 2 months before she came to the clinic.

EXAMINATION

The patient presented with a streak of blood flowing down from the medial canthus, along the nasojugal furrow (Figure). The eyes were examined for a source of the bleeding. The conjunctiva appeared strikingly "white", with no evidence of congested vessels in the bulbar or palpebral conjunctiva. She was admitted to hospital, and the eyes were examined each time the bleeding occurred.

FIGURE *Vicarious menstruation from the conjunctiva*

The whole conjunctival sac was seen to be oozing blood, which streaked down the cheeks, leaving the eye white as before. Slit-lamp examination revealed no pathological lesion. Fundus examination was normal, and the ocular tension and visual fields were within normal limits.

The visual acuity was 6/18 in both eyes without glasses, and 6/6 with correction, right eye -0.25 D sph., -0.5 D cyl., axis 180° ; left eye -0.5 D sph., -0.5 D cyl., axis 180° . Colour vision was normal. The lacrimal gland and passages were normal and patent on syringing.

Thorough medical, gynaecological, and ear, nose and throat examinations were performed, but no cause for the bleeding could be found. The patient was unstable, nervous, and easily agitated.

INVESTIGATIONS

A complete blood examination gave the following results:

Red blood cells 3,120,000/c.mm.

Haemoglobin 60 per cent.

Leucocytes 9,000/c.mm.

Platelets 252,000/c.mm.

Erythrocyte sedimentation rate 5 mm./1st hr; 12 mm./2nd hr.

Coagulation time – 4 min.

Bleeding time – 2 min.

Blood group – B

Liver function tests were also performed, and found to be within normal limits.

X rays of the skull and orbits were negative.

TREATMENT

The patient was treated for her anaemia, by massive iron preparations, until the blood count reached normal limits. Vitamin C was also prescribed.

FOLLOW-UP

Repeated fundus, slit-lamp, and blood examinations were made for a period of 4 months.

Discussion

The fact that the bleeding was cyclic is evidence of vicarious menstruation. The inter-cyclic bleeding could be explained by anaemia, which was evident from the blood examination. After we had treated the anaemia, the inter-cyclic bleeding diminished although the cyclic bleeding was not affected.

Vicarious menstruation has been described as occurring from many sources: the nose, conjunctiva, retina, eyelids, ears, stomach, intestines, rectum, lungs, kidneys, umbilicus, abdominal fistulae, nipples, gums, lips, and skin (Israel, 1961; Novak and Jones, 1961; Duke-Elder, 1965). It usually coincides with normal menstruation, and is supplementary; but if it replaces the normal menstruation, it is substitutional, and occurs sometimes after hysterectomy (Jeffcoate, 1967).

The cause of such bleeding is unknown. Some instances may be explained by a local vascular disturbance, possibly due to oestrogen, while in other cases the blood may issue from benign metastases of the endometrium to bizarre locations (Israel, 1961).

Duke-Elder (1965) reported that vicarious menstruation from the conjunctiva may be due to "instability of the nervous system" and not to a hormonal disturbance. Jeffcoate (1967) mentioned that it was more often found in individuals with "nervous and vascular instability", a fact that was confirmed in our patient.

The commonest form of vicarious bleeding is epistaxis, which is a feature of at least 30 per cent. of cases (Roth, 1920). The nasal mucosa is influenced by oestrogen, and becomes congested and swollen during premenstruation, when the amount of oestrogen in the blood is high; or when the hormone is applied directly to the mucosa. This is the basis for the topical use of oestrogen in the treatment of atrophic rhinitis (Mortimer, Wright, Bachman, and Collip, 1936).

Bean (1953) mentioned that the effect of oestrogen on the capillaries and venules of the skin may account for the rare form of supplementary vicarious menstruation, known as "dermatosis dysmenorrhoeica symmetrica of Polland". The cause may be a generalized vasospasm with increased capillary permeability during the 2 premenstrual days (Brewer, 1938). This capillary permeability may be produced by menstrual toxin (Macht, 1949; Smith, 1950).

Vicarious menstruation of endometriosis, may arise from pieces of endometrium implanted into the incision during operations on the uterus. This accounts for cyclic bleeding from scar tissue, which occurs in response to ovarian oestrogen from a pinhole opening in the scar (Israel, 1961). It may also arise from a blood- and lymph-borne metastasis of endometrium (Javert, 1951), thus accounting for vicarious menstruation from unusual sites as the kidney (Marshall, 1943).

The first principle of treatment is to make a complete systemic survey to exclude blood dyscrasia and organic lesions. The administration of vitamin K, C, or P, which are designed to strengthen the capillary walls, should be tried (Israel, 1961).

Jeffcoate (1967), advised that "no special treatment is necessary, unless the bleeding is marked and uncontrollable, as when retinal haemorrhages threaten sight; suppression of ovarian function may be considered." A temporary remission can be obtained by administering testosterone.

Summary

A case of vicarious menstruation from the conjunctiva in an anaemic and nervous patient is reported; the bleeding was cyclic in conjunction with the menstrual cycle. Inter-cyclic bleeding was improved by treating the patient's anaemia.

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