

Sudden loss of vision associated with use of systemic non-steroidal anti inflammatory drugs.

Abstract:

Non-steroidal anti inflammatory agent has long been used in ocular therapeutics as a result of its effect inflammation coupled with the undesirable side effects of steroids in ophthalmology. Bleeding peptic ulcers have been strongly associated with use of oral NSAIDs. We present the case of a 51 year old male patient who presented with 4 days history of visual loss in his right eye following the use of 400mg Ibuprofen three times a day for 3 days one week prior to presentation. Fundus examination revealed a pre-retinal hemorrhage. There may be need to be cautious with the use of these drugs.

Keywords: non-steroidal anti-inflammatory drug, loss of vision, retinal haemorrhage

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28 Introduction:

29 Non steroidal anti inflammatory drugs (NSAID) have been used medically since 1763. Their
30 strong effect on inflammation coupled with the undesirable side effects of steroids in
31 ophthalmology has made NSAID popular in ophthalmic therapeutics. They are increasingly
32 employed to reduce miosis, inflammation, and prevent/treat cystoid macular edema associated
33 with cataract surgery. Furthermore, they are used to reduce postoperative pain and photophobia
34 associated with refractive surgery and to reduce the itching associated with allergic
35 conjunctivitis.

36 Retinal hemorrhages follow a number of situations such as presence of abnormal vessels that
37 bleed easily such as found in diabetic retinopathy, central retina vein or artery occlusions,
38 hypertensive retinopathy and so on. The pathogenesis in these conditions is as a result of
39 ischemia, hypoxia and neovascularisation. These new vessels have fragile walls and tend to
40 rupture easily. They can also be found in valsalva retinopathy in which there is raised intra
41 abdominal pressures and raised intra-orbital pressures such as found after straining at
42 defaecation, coughing, sneezing, weight lifting, vomiting and blowing musical activity.

Bleeding peptic ulcers have been strongly associated with use of NSAIDs.¹ An association has also been found between type of non-steroidal anti inflammatory drug and dose used. Risk was found to be lowest for Ibuprofen and diclofenac, intermediate for indomethacin, naproxen and piroxicam while azapropazone and ketoprofen carried the highest risks.^{1, 2}

However, retinal hemorrhage following systemic use of non steroidal anti inflammatory drugs (NSAID) has not been reported in literature.

Non steroidal anti inflammatory drugs (NSAIDs) inhibit the activity of both cyclooxygenase 1 and cyclooxygenase 2 and therefore the synthesis of prostaglandins and thromboxanes. Inhibiting COX2 leads to the anti inflammatory, analgesic and antipyretic effects and inhibiting COX1 can cause bleeding by increasing the permeability of blood vessels. NSAIDs have marked inter-subject variability in response and incidence of side effects.³ Hemorrhages can be pre-retinal, sub retinal or intra retinal.

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74 Case report:

75 A 51 year old male patient with previously diagnosed hypermetropia and bilateral immature
76 cataracts presented with 4 days history of visual loss in his right eye. He had no previous history
77 of diabetes mellitus, hypertension, bleeding disorder or sickle cell disease. There was no history
78 of trauma but one week before presentation, he treated body pains with Ibuprofen 400mg three
79 times a day for 3 days. His visual acuity was counting fingers on the right and 6/6 on the left
80 with glasses. Dilated fundoscopy using 1% tropicamide revealed a pre-retinal haemorrhage
81 involving the macular region. Fundus photograph of the same patient is as shown in figure 1.

82 His blood pressure was 130/80mmHg, packed cell volume 42%, genotype AA, fasting blood
83 sugar 92mg/dl.

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97 Discussion:

98 Retinal haemorrhages are commonly found in diseases such as systemic hypertension,⁴ sickle

99 cell disease,^{5, 6} diabetes mellitus,⁷ central retinal vein occlusion and so on. Subhyaloid and

100 retinal haemorrhages are usually associated with retinal neovascularization but they can also be

101 caused by posterior vitreous detachment and retinal breaks that is associated with tearing of a

102 major retinal vessel. The patient in this report did not have anything suggestive of these causes.

103 Valsalva retinopathy is also associated with retinal haemorrhages but this patient did not have

104 any history of straining at defaecation, coughing, sneezing, weight lifting, vomiting or blowing

105 musical activity.

106 He has no history of bleeding disorders and his laboratory reports did not reveal sickle disease

107 thrombocytopenia or anaemia

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109 Retinal haemorrhages may remain undetected for many years if they do not involve the macula.

110 Sometimes they are picked up when the eye is examined in detail by ophthalmoscopy and fundus

111 photography. However, some retinal haemorrhages can cause severe impairment of vision if they

112 involve the macula as in this case or they occur in connection with [posterior vitreous](#)
113 [detachment](#) or [retinal detachment](#).

114 Non steroidal anti inflammatory drugs (NSAID) have a strong effect on fever, pain and
115 inflammation. These effects have made them very useful in ophthalmology especially
116 considering the undesirable side effects of steroids such as glaucoma. They are increasingly
117 employed to reduce miosis, inflammation, and prevent or treat cystoid macular edema associated
118 with cataract surgery. Furthermore, they are used to reduce postoperative pain and photophobia
119 associated with refractive surgery and to reduce the itching associated with allergic
120 conjunctivitis.

121 Systemic NSAIDS are used in selected cases in ophthalmic practice. However, the use of
122 systemic NSAIDS for non-ocular conditions is still very common and patients tend to get them
123 readily from pharmacy shops in developing countries.

124 Although, bleeding peptic ulcers have been strongly associated with use of NSAIDs, retinal
125 haemorrhages have not been commonly reported.¹This may be due to the fact that they may
126 remain unreported if they do not affect sight.

127 This case illustrates a serious adverse effect of NSAIDs. It is therefore necessary to curb
128 indiscriminate use of systemic NSAIDs.

129 Conclusion:

130 Non-steroidal anti inflammatory drugs can cause sudden loss of vision from bleeding that affects
131 the macula. Necessary steps should be taken to educate the populace to stop indiscriminate use of
132 drugs especially NSAIDs

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166 Figure 1: Pre retinal hemorrhage following the use of NSAID

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