detachment in the posterior pole and in the vascular arcades (Figure 1). Automated perimetry (Humphrey) showed an increased blind spot in both eyes and islands of sensitivity loss in the upper nasal and lower temporal regions of the right eye. Nuclear magnetic resonance of the cranium and the orbits were normal. The diagnosis of dengue fever was confirmed with positive serology (IgM antibodies). The patient remained under clinical and ophthalmological observation and was treated with analgesics. His hematimetric indices were kept under control. After a 2-month follow-up, the clinical picture and the neuroretinitis resolved spontaneously, with improved visual acuity (20/20 in OU) (Figure 2) and disappearance of perimetric alterations.

Discussion

Sudden low visual acuity syndrome associated to optic disc oedema and macular star exudates is denominated neuroretinitis.³ Practically all neuroretinitis cases are of infectious origin, with *Bartonella* the main agent involved, causing cat scratch disease in two-thirds of the cases.^{3,4} The differential diagnosis reported in the literature is performed with various infectious diseases, such as toxoplasmosis, leptospirosis, mumps, herpes simplex virus, salmonella, tuberculosis, Lyme disease and syphilis.⁴ Our report has added another rare diagnostic possibility when neuroretinitis appears in an individual with symptoms of viral infection in a dengue-endemic region.

References

- 1 Haritoglou C, Scholz F, Bialasiewicz A, Klauss V. Ocular manifestation in dengue fever. *Ophthalmologe* 2000; **97**: 433–436.
- 2 Anargyros E. Cases of ocular complications during dengue epidemic. *Arch Ophthalmol* 1929; **46**: 214.
- 3 Bhatti MT, Asif R, Bhatti LB. Macular star in neuroretinitis. *Arch Neurol* 2001; **58**: 1008–1009.
- 4 Purvin V, Ranson N, Kawasaki A. Idiopathic recurrent neuroretinitis: effects of long-term immunosuppression. *Arch Ophthalmol* 2003; **121**: 65–67.

CA de Amorim Garcia, AHB Gomes and ÁGF de Oliveira

Department of Ophthalmology, Federal University of Rio Grande do Norte (UFRN), Rua Ceará Mirim, 316, Bairro Tirol, Natal, Rio Grande do Norte 59020-240, Brazil

Correspondence: CA de Amorim Garcia,
Tel: +55 84 3211 5888;
Fax: +55 84 3211 5888.
E-mail: prontoc.de.olhos@digicom.br

Study performed at the Department of Ophthalmology, UFRN

The authors do not have any commercial or proprietary interest in any of the products or companies cited in the article

Eye (2006) **20**, 1382–1383. doi:10.1038/sj.eye.6702219; published online 13 January 2006

Sir,
Shellfish allergy: a contraindication for fundus fluorescein angiography; misconception or reality

Shellfish allergy is sometimes wrongly considered a contraindication to Fundus Fluorescein Angiography (FFA). We report a case of a patient with shellfish allergy in which this misconception led to delay in angiogram. The patient was referred to us with suspicion of Choroidal Neovascular Membrane (CNV) in which we performed FFA later without any adverse reaction.

Case report

A 39-year-old Caucasian lady presented with reduced vision in the left eye for one month. She was referred to us from another hospital about 50 miles away with suspicion of CNV. Fundus Fluorescein angiography was not performed at referring hospital because of a known history of shellfish allergy. The patient had anaphylactic shock after eating shellfish a few years ago. There was no history of allergic reactions to iodine, dyes, or other medicines. Her visual acuity was 6/4 in the right eye and 6/18 in the left. On examination, we noticed a greenish lesion with overlying subretinal fluid in the left eye. We planned to perform FFA to localise and characterise the lesion. Having reassured that the risk of anaphylaxis is very low with FFA, she underwent FFA with no problems and diagnosed as having subfoveal CNV.

Comment

Shellfish (crustaceans and mollusks) have long been known as a common cause of allergic reactions to food. Like other food allergies, the allergic reactions to shellfish involve IgE-mediated type I hypersensitivity. Biochemical and molecular studies have documented that the major shrimp allergen is the muscle protein tropomyosin.¹ It is an essential protein in muscle contraction both in invertebrates and vertebrates. In

invertebrates, tropomyosins, which have a molecular weight of between 38 and 41 kDa, show high-degree homology in their amino-acid sequence and are the panallergens responsible for cross-reactions between crustacea, insects, mites, nematodes, and different classes of mollusks. It is estimated that 50% of individuals allergic to some type of fish are at risk of reaction to a second species, while those allergic to some type of crustacea present a risk of 75% due to the greater similarity among tropomyosins.² The allergic reaction is manifested by flushing, urticaria, angioedema, and shock. Other reactions may include gastrointestinal (nausea, diarrhoea, abdominal cramping), respiratory (laryngospasm, wheezing), and ocular (conjunctivitis).¹

Intravenous ocular angiography is a commonly performed and valuable diagnostic procedure. There are usually two types of dyes used in this procedure. Indocyanine green dye (ICG) is described as extremely safe and well tolerated diagnostic agent. Hope Ross *et al* provided a comprehensive and carefully prepared evaluation of adverse reactions to ICG dye. The report describes 1923 ICG angiograms performed in 1226 consecutive patients over a 2-year period. Mild to moderate reactions were noted after ICG angiography in seven patients, two had gastrointestinal disturbance, one experienced extravasation of dye into the tissue surrounded by injection site and two had urticaria with syncope. Only one patient experienced a vasovagal episode that was classified as severe in nature. There may be an increased incidence of adverse reactions and complications in patients with history of iodine allergy, uraemia and liver disease.³ There is some evidence to suggest that ICG has cross reactivity with shellfish, although this is weak. Interestingly there are few reported cases in which iodine-containing drugs were given to the patients with documented evidence of shellfish allergy without any adverse events.⁴

However, the commonly used Fluorescein sodium dye has no known cross reactivity with shellfish. The frequency of adverse reactions after angiography has varied considerably in previous reports. In a prospective study of 2789 angiographic procedures in 2025 patients, Kwiterovich *et al*⁵ found that the percentage of adverse reactions depended strongly on the patient's angiographic history. Overall, adverse reactions followed 4.8% of the angiographic procedures. These reactions included nausea (2.9%), vomiting (1.2%), flushing/itching/hives (0.5%), and other reactions (dyspnea, syncope, excessive sneezing) (0.2%). No cases of anaphylaxis, myocardial infarction, pulmonary oedema, or seizures occurred. The percentage of reactions was 1.8% for patients who had previous

angiography without ever having an adverse reaction. An extensive literature search has not revealed any incident of Fluorescein hypersensitivity in the patients with shellfish allergy. The Royal College of Ophthalmologists (RCO) UK guidelines 2000 and manufacturer's label (Martindale pharmaceutical) do not include shellfish allergy as a contraindication to Fluorescein angiography.

Few Ophthalmologists consider shellfish allergy a contraindication to FFA because of confusion between ICG and FFA. In this case and others, we have encountered this misconception, which led to some delay in management. It is hoped that this brief report will help dispel this misconception.

References

- 1 Leung PS, Chu KH. Molecular and immunological characterization of shellfish allergens. *Front Biosci* 1998; **3**: 306–312.
- 2 Torres Borrego J, Martinez Cuevas JF, Tejero Garcia J. Cross reactivity between fish and shellfish. *Allergol Immunopathol (Madr)* 2003; **31**: 146–151.
- 3 Hope-Ross M, Yannuzzi LA, Gragoudos ES, Guyer DR, Slakter JS, Sorenson JA *et al*. Adverse reactions due to Indocyanine green. *Ophthalmology* 1994; **101**: 534–541.
- 4 Brouse SD, Phillips SM. Amiodarone use in patients with documented allergy to iodine-containing compounds. *Pharmacotherapy* 2005; **25**: 429–434.
- 5 Kwiterovich KA, Maguire MG, Murphy RP, Schachat AP, Bressler NM, Bressler SB *et al*. Frequency of adverse systemic reactions after fluorescein angiography. Results of a prospective study. *Ophthalmology* 1991; **98**: 1139–1142.

A Awan and YC Yang

Wolverhampton Eye Infirmary, Wolverhampton
WV3 9QR, UK

Correspondence: A Awan, Wolverhampton Eye
Infirmary, Compton Road,
Wolverhampton WV3 9QR, UK
Tel: +44 190 242 9215;
Fax: +44 190 242 9215.
E-mail: dramer_awan@yahoo.co.uk

None of authors has a financial or proprietary
interest in any material or method used

Eye (2006) **20**, 1383–1384. doi:10.1038/sj.eye.6702220;
published online 6 January 2006