

British Journal of Ophthalmology, 1985, **69**, 654–655

Shifting subretinal fluid in rhegmatogenous retinal detachment

G R KIRKBY AND A H CHIGNELL

From the Ophthalmic Department, St Thomas's Hospital, London

SUMMARY In a consecutive series of 470 cases of rhegmatogenous retinal detachment 25 (5%) were found to have shifting subretinal fluid (SRF) at the preoperative examination. The study showed that the association between SRF and rhegmatogenous retinal detachment is unusual but not rare. Shifting SRF was most often associated with aphakic and longstanding retinal detachment, and found in cases in which the retinal holes were small.

The term shifting subretinal fluid (SRF) is used when after a change in posture the configuration of the detached retina, when observed with indirect ophthalmoscopy, alters immediately owing to the movement of SRF in the subretinal space to the most dependent part of the globe. Thus, with inferior shifting SRF, rotation of the patient's head from side to side results in transfer of SRF from one inferior quadrant to the other. Most rhegmatogenous detachments do not show shifting SRF, but it is frequently observed in cases of non-rhegmatogenous detachment. The latter group includes various disorders (for example, eclampsia) and inflammatory conditions such as Vogt-Koyanagi-Harada syndrome,¹ and it has also been associated with a uveal effusion syndrome with bilateral serous retinal detachment.² The suggestion has also been made that shifting SRF is more commonly seen where the detachment is relatively longstanding and retinal holes are small.³ The association of shifting SRF with rhegmatogenous retinal detachment has otherwise received little attention, and the purpose of this study was to examine the clinical features of 25 cases.

Patients and methods

Four hundred and seventy patients undergoing retinal detachment surgery at St Thomas's Hospital were studied. Patients were examined routinely by binocular indirect ophthalmoscopy and scleral depression. The posterior segment was also examined with three-mirror gonioscopy. Particular details of the vitreous cavity and the detached retina were entered on

Correspondence to Mr A H Chignell, St Thomas's Hospital, London SE1 7EH.

proforma sheets. In order to decide whether shifting SRF was present our patients were examined in the supine and sitting positions. Observation of the fundus was made by indirect ophthalmoscopy when the head was rotated from side to side. Patients were deemed to have shifting SRF only if the movement of fluid was massive (i.e., with an obvious change in configuration of the detached retina).

Results

Twenty-five cases (5%) of our series were found to have shifting SRF.

Membranes. For shift of SRF to occur the retina must be mobile enough to allow its contour to change. Twenty (80%) of our cases had no evidence of periretinal membrane formation, and in the remaining five cases there was only minimal preretinal membrane present which was not sufficient to interfere with retinal mobility.

Holes. Of the 25 cases studied 15 (60%) were found to have retinal holes either before or during operation. In all cases the holes were 'small'—i.e., small enough to be detected with difficulty by indirect ophthalmoscopy). Holes were not found in the remainder principally owing to the significantly high ($p < 0.05$) incidence of aphakia in the shifting SRF group (Table 1), with the recognised difficulty in locating small holes in these cases.⁴

Posterior vitreous detachment. In all 25 cases with shifting SRF a complete posterior vitreous detachment was present.

Duration of retinal detachment. In our series (Table 2) 17 (68%) detachments had been present for more than one month as compared with 187 (42%) in

Table 1 Refractive errors in the series of 470 cases

	Shifting SRF (25)	Non-shifting SRF (445)
Aphakia	13 (52%)	85 (19%)
Myopia	4 (16%)	205 (46%)
Emmetropia	8 (32%)	155 (35%)

Table 2 Duration of retinal detachment in series of 470 cases

	Shifting SRF (25)	Non-shifting SRF (445)
0-1 week	1 (4%)	89 (20%)
2-4 weeks	7 (28%)	169 (38%)
1-6 months	11 (44%)	125 (28%)
More than 6 months	6 (24%)	62 (14%)

the rest of the series. This difference is significant ($p < 0.05$) and indicates that detachments in the shifting SRF group were relatively longstanding.

Discussion

For shift of SRF to occur the retina must be sufficiently flexible to allow its contour to change. Thus in our 25 cases retinal fibrosis, which can result in immobility of detached retina, was either completely absent or very slight. In all our cases the retinal holes which we were able to detect were small, confirming the observation of Schepens.³ It is

probable that small retinal holes prevent rapid movement of fluid between the subretinal and retrohyaloid space, fluid tending to remain in the subretinal space. In all 25 cases complete posterior vitreous detachment was present. Complete vitreous detachment, particularly if combined with intracapsular aphakia (52% of our cases), may contribute to the aetiology of shifting SRF, as there is substantial anterior displacement of gel to allow unrestricted movement of the retina free from vitreous tamponade.

In conclusion, shifting SRF is a physical sign that can be observed in a small proportion of patients with rhegmatogenous retinal detachment (5%). It is more common in cases of aphakic and longstanding detachment and ones that have not been complicated by periretinal fibrosis. Retinal holes when found were small.

This work was in part supported by the Iris Fund.

We are grateful to Mrs Margaret Grice for her secretarial assistance.

References

- 1 Duke-Elder S. *System of ophthalmology*. London: Kimpton, 1967; **10**: 774-5.
- 2 Schepens CL, Brockhurst RJ. Uveal effusion. *Arch Ophthalmol* 1963; **70**: 189-201.
- 3 Schepens CL. *Retinal detachment and allied diseases*. Philadelphia: Saunders, 1983; **1**: 193.
- 4 Ashraezadeh MT, Schepens CL, Elzeneiny I, Moura R, Morse P, Kraushar MF. Aphakic and phakic retinal detachment. *Arch Ophthalmol* 1973; **89**: 476-83.



Shifting subretinal fluid in rhegmatogenous retinal detachment.

G R Kirkby and A H Chignell

Br J Ophthalmol 1985 69: 654-655

doi: 10.1136/bjo.69.9.654

Updated information and services can be found at:
<http://bjo.bmj.com/content/69/9/654>

Email alerting service

These include:

Receive free email alerts when new articles cite this article. Sign up in the box at the top right corner of the online article.

Notes

To request permissions go to:
<http://group.bmj.com/group/rights-licensing/permissions>

To order reprints go to:
<http://journals.bmj.com/cgi/reprintform>

To subscribe to BMJ go to:
<http://group.bmj.com/subscribe/>