

Remembering the Modified *Lincoff's* rules for practical identification of retinal break in regmatogenous retinal detachment

Keywords: modified *Lincoff's* rules, retinal break, sub retinal fluid, detachment

Abbreviations: RB, retinal break; RRD, regmatogen retinal detachment; VRS, vitreoretinal surgery; PPV, pars plana vascotomy; SRF, sub retinal fluid; PVD, posterior vitreous detachment; OD, optic disc

Editorial

Finding retinal break (RB) causing rhegmatogenous retinal detachment (RRD) is a critical step before vitreoretinal surgery (VRS). To locate

and find small-dimensioned or hidden RBs in thin, folded and clear retina may sometimes be difficult. Intraoperative visualization of the peripheral retina in pars plana vitrectomy (PPV) may provide to detect these. However, each RB cannot be detected even during careful peripheral retinal examination with indentation. The detection of the RB is the first stage of the management of RRD. Possible localizations of RBs in the eyes with RRD are supero temporal (60%), superonasal (15%), inferotemporal (15%) and inferonasal (10%) quadrants. Additionally, it should not forget that there is more than one RB, and it is often within 90° of each other in about 50% of the eyes with RRD. RBs in pseudophakic eyes are almost invariably anterior to the equator.¹ In most cases, RBs can be detected through *Lincoff's* rules before the surgery. Although the application of these rules has been not used as much as in the past, I think that *Lincoff's* rules should be taken into account again in the identification of the RBs. Modified *Lincoff's* rules are rules to detection of primary RBs based on the configuration of sub retinal fluid (SRF) and the localisation of RRD in retrospective analysis of 1,000 cases of RD.¹ In a recent study, it has been reported that anterior RBs and posterior vitreous detachment (PVD) have a significant association with validity of *Lincoff's* rules.² It has been reported that these rules are confirmed to 96% of cases with primary RRD. Modified *Lincoff's* rules include followings:^{1,3-6}

- i. **Inferior RD with equal SRF levels on both sides of the OD:** A primary RB will be at inferior, at 6 o'clock position (Figure 1A).
- ii. **A shallow inferior RD in which the SRF is slightly higher on the temporal side:** A primary RB will be located inferiorly on that side (Figure 1B). On the other words, in "Lateral" RRD that means inferior swallow RRD with SRF higher on one side of the optic disc (OD) (superotemporal or superonasal RRD), primary RB is within 1.5 clock hours of the higher border of RRD.
- iii. **A bullous inferior RRD:** A primary RB will usually exist above the horizontal meridian (Figure 1C).
- iv. **A diffuse RRD with a superior attached wedge retina from OD to ora serrata:** Because of the primary RB located in the upper nasal quadrant, the SRF will revolve around the OD and then rise on the temporal side until it is level with the primary RB (Figure 1D).
- v. **A subtotal RRD with a superior wedge of the attached retina:**

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A primary RB will locate in the periphery nearest its highest border (Figure 1E).

- vi. **A diffuse RRD with an inferior attached wedge retina from OD to ora serrata:** When the SRF crosses the vertical midline above; the primary break is near to 12o'clock, the lower edge of the RRD corresponding to the side of the break (Figure 1F).

In conclusion, in this editorial, I aimed to remind modified *Lincoff's* rules for identification of primary RBs in RRD.

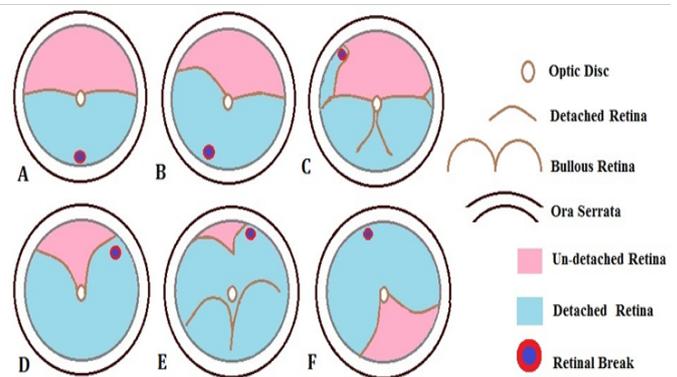


Figure has been adopted from "Fig. 16.27 drawn by Tarrant" in the reference 1".

Figure 1 Highly possible retinal breaks for retinal detachments at various quadrants.

Note Figure has been adopted from "Fig. 16.27 drawn by Tarrant" in the reference 1".

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References

1. Bowling B. Retinal Detachment. In: *Kanski's Clinical Ophthalmology. A systematic approach*. 8th ed. China: Elsevier, Saunders Ltd; 2016. p. 701–719.
2. Azad SV, Takkar B, Bhatia I, et al. Lincoff rules are not followed in retinal detachment with posterior breaks and attached cortical vitreous. *Retinal Cases and Brief Reports*. Publish Ahead of Print; 2017.
3. Lincoff H, Gieser R. Finding the hole. *Arch Ophthalmol*. 1971;85(5):565–569.
4. Lincoff H, Kriessig I. Finding the retinal hole in the pseudophakic eye with detachment. *Am J Ophthalmol*. 1993;117(4):442–446.
5. Lincoff H, Kreissig I. Extraocular repeat surgery of retinal detachment. A minimal approach. *Ophthalmology*. 1996;103(10):1586–1592.
6. Saxena S, Lincoff H. Finding the retinal break in rhegmatogenous retinal detachment. *Indian J Ophthalmol*. 2001;49(3):199–202.