Review Article

Bilateral Rhegmatogenous Retinal Detachment: A Study on Senegalese Black Population

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ABSTRACT

Purpose: To Report cases of consecutive and simultaneous bilateral rhegmatogenous retinal detachment.

Methodology: retrospective study of 33 patients (66 eyes) with consecutive or simultaneous bilateral rhegmatogenous retinal detachment between October 2006 and September 2020. The data was processed by the Excel and SPSS software.

Results: The hospital frequency was 9.96%. The mean age was 44.32 years. The initial visual acuity was less than 20/200 in most cases. 66.7% eyes had myopia. The retinal detachment was limitated in 53.12% eyes with a macula spared in 69.7%. Stage C of vitreoretinal proliferation was found in 57.6% of cases. Retinal holes and giant tears was accounted for 38% and 25.39%. Pars plana vitrectomy with silicone oil and segmental scleral buckling were performed respectively in 68% and 32%. Anatomical success was noted in 92% and functional sucess in 72% of cases.

Conclusion: Bilateral rhegmatogenous retinal detachment is a pathology of young adults, and myopia is the main risk factor.

INTRODUCTION

Rhegmatogenous retinal detachment is characterized by its tendency to bilateralization estimated on average between 10-20% according to the studies [1]. The bilateral rhegmatogenous retinal detachment can be simultaneous or consecutive. It's said simultaneous when it interested both eyes in the initial examination; consecutive or bilateralized is referred to when it occurs on a controlateral eye after a free interval [2,3]. Their incidence, low in all series is increased in case of high myopia and young adults are the most affected. In this sense, we share in this study our experience in the diagnosis and management of bilateral Retinal Detachment (RD) in senegalese black population.

MATERIALS AND METHODS

This was a retrospective study including all patients diagnosed with simultaneous or consecutive bilateral RD between October 2006 and September 2020 at the Ophthalmology Department of Abass Ndao's Hospital (Dakar-Senegal), which is a referral center of retinal diseases. We collected all clinicals, therapeuticals and evolutive datas . Each patient was examined by at least two ophthalmologists, and for each eye an examination with an aspherical lens, a three-mirror lens and an indirect binocular ophthalmoscopy (Schepens) was performed. Surgery was

performed in all our patients by the same surgeon. All patients had a post-operative regular follow-up. The data were processed using Excel and SPSS software.

RESULTS

We had collected 33 patients (66 eyes), 22 (66,7%) of them had consecutive RD and 11 (33,3%) had simultaneous RD. The hospital frequency of bilateral RD was 9.96%, 6.64% concerned consecutive RD and 3.32% for simultaneous RD. Twenty nine of patients (87,87%) were male and 4 (12,13%) were female and the mean age was 44.32 years. Pseudophakia was noted in 19.69% of cases, and ocular trauma was reported by 6% of patients. The mean time to visit was 27.1 days and decrease in visual acuity was the reason in 69.6%. In 2 cases, the RD of the controlateral eye was diagnosed during a systematic routine examination. The initial visual acuity ranged from no light perception to 20/25. Myopia was present in 66.7% of cases with 11.1% high myopia. This myopia concerned 27.27% of patients with simultaneous RD. In cases of consecutive RD, the average time to bilateralize was 45 months. The RD was limitated in 53.12%, and 35.96% concerned consecutive RD. For 9.3% of patients, the RD had the same topography in both eyes. Macula was spared in 30.3% of cases. The fundus examination found retinal holes (38%), giant tears (25.39%), simple tears (19%), retinal dialysis (11.1%) and horseshoe tears (6.34%). They were associated with lattice degeneration in 13.7% of cases. Stage A of vitreoretinal proliferation was found in 23.72% of the eyes, Stage B in 18.64% and Stage C in 57.6%. Among the stage A, 78.57% concerned the controlateral eye's RD. The mean time for surgery was 27.08 days, with 68% operated in an average of 4.41 days. Vitro-retinal surgery was performed in 37.8% of the patients, with pars plana vitrectomy in 25.75% cases and segmental scleral buckling in 12.05%. Anatomical succes was noted in 92% of cases and functional recovery in 72%. A recurrence of the RD occurred in 2 eyes with scleral buckling, pars plana vitrectomy was performed for the second surgery.

DISCUSSION

In our study, the frequency of bilateral RD was 9.96%, it was estimated at 10.2% by lakeyal-Ayat [4] and 11.65% by Trigui [2]. The simultaneous RD, less frequent represented 3.32% in our study. Bodanowitz [5] reported a lower frequency (1.2%), as did Mahfoudi (1.36%) [6] and Trigui (1.6%) [1]. The average age of our patients was 44.32 years, in agreement with many authors who consider bilateral RD as a pathology of young adults [4.2]. However, other authors found younger age in simultaneous RD [2,6-8].

Epidemiological studies report a male predominance of the RD in general and the bilateral RD is not an exception. Men counted for 73% in the Bodanowitz's study [5], 70% for Singh [7] and 67% for Finn [8]. The results of our study were significantly higher with 87.87% men. Trigui in Tunisia [2] and Mahfoudi in Algeria [6], for their part, noted female predominance, which could be justified by the high rate of myopia among women in their countries.

The mean time to visit was long in our study, however 44.4% of patients visited in less than 7 days for RD's sign in the controlateral eye. This shows the recognition of the signs perceived when the RD occured in the first eye. For our patients, the controlateral eye's RD occurred on average of 45 months (3.75 years), McPherson [9] estimated it to 3.9 years and it was less than 5 years in 71% of Laatikainen's patients [1].

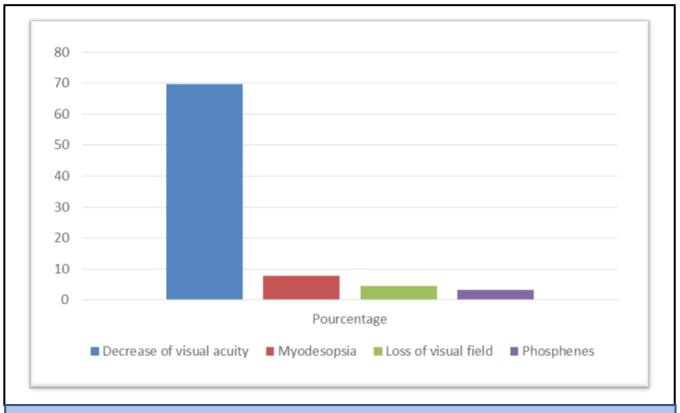

Figure 1: Complaints reported by the patients.

The decrease of visual acuity was the main reason for visiting for 69.4% patients (Figure1), however in two cases, the fellow eye's RD was found during a systematic routine examination. For simultaneous RD, unilateral symptomatology was frequently reported [6,7,10], which could be explained by the severity of the signs of one eye, masking those of the contralateral eye.

Myopia was the main risk factor for bilaterality in 66.7% of our patients. Burton [11] reported 21% bilateral RD in myopia compared to only 10% in emmetropia. This myopia

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predisposes to degenerative lesions of the retinal periphery, which were dominated in our study by retinal holes (Figure 2), also found in 36% of cases by El Matri [3], 41% by Trigui [2], and 44.4% by Mahfoudi [6]. The giant tears present in 25.39% are also strongly correlated with bilateral RD, Freeman [12] reports 60% bilateralization in patients followed for RD on giant tears, thus imposing a particular monotoring of the fellow eye. In our case, these retinal tears were associated with lattice degeneration in 13.7%, this association would expose to a risk of 10% of controlateral eye's RD according to Bonnet [13]. There is no consensus on the systematic prophylactic treatment of these lesions. Among our patients 7.5% had fellow eye's RD despite prophylactic photocoagulation [14]. This prophylactic treatment therefore does not exclude a RD, but would reduce the risk from 13.4% to 1.2% according to Avitabile [15].

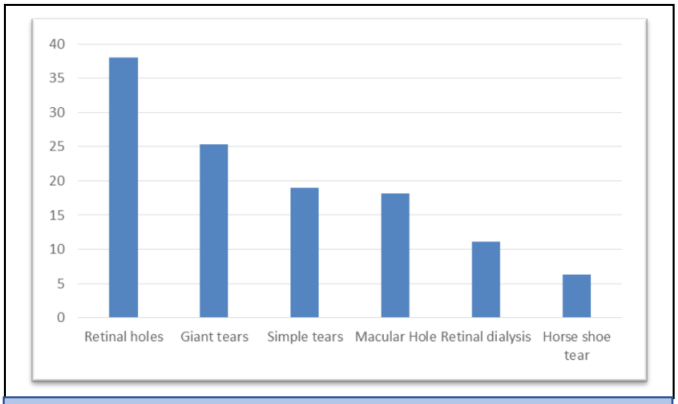

Figure 2: Type of tears found during the fundus examination.

We found partial RD in 53.12% of cases, with only 30.3% macula "on". In other studies, partial RD was also predominant with a macula spared in the majority of cases [3,10]. In our study, macula involvement was mostly found in simultaneous RD, this predominance was also observed by other authors [2,6], making bilateral and simultaneous RD a serious pathology with a pejorative prognosis.

All of our patients had vitreoretinal proliferation, unlike Trigui [2] and Mahfoudi's [6] studies, where it was absent respectively in 40.9% and 22.2% of cases. The predominance of stage C of vitreoretinal proliferation in our study (57.6%) was linked on the one hand to late visiting and on the other hand to the frequency of giant tears. This high rate of stage C vitreoretnal proliferation, combined with the frequency of giant tears, justified the pars plana vitrectomy with silicone oil as first-line treatment in 68% of our patients. However, scleral buckling performed in 32% of cases (Figure 3), was the first line treatment in other studies; El Matri [3] performed it in all his patients, Finn in 85.71% [8] and Trigui in 66.67% [2].

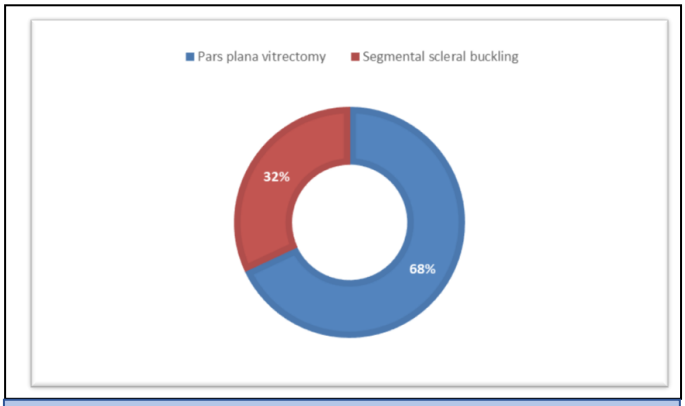

Figure: Type of surgery performed.

Surgery was performed in an average time of 4.41 days in 68% of patients and focused first on the eye with the best prognosis. This surgical attitude was adopted by many authors [2,6,10]. In the post-operative period, anatomical success was obtained in 92% of cases, comparable to the results of El Matri and Trigui [3,2]. This anatomical success was correlated with functional recovery in 72% of cases. Visual acuity was steady in 16% eyes and decreased in 12%. During follow-up, a recurrence of RD occurred in two patients with segmental scleral bucking requiring pars plana vitrectomy.

CONCLUSION

Bilateral rhegmatogenous retinal detachment is a rare condition affecting young adults. The main risk factor is myopia. Their prognosis is serious especially in the case of simultaneous RD which frequently affected macula with severe vitreoretinal proliferation at the first examination. Their management will interest first the eye with the best functional prognosis period. The frequency of RD's bilateralization requires special monitoring and even prophylactic treatment of the fellow eye. In our countries, late visiting is the first barrier to early management, thus requiring clear information on the warning signs of RD in patients at risk.

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