

Pan-retinal photocoagulation therapy for Rubeosis and Vitreous Haemorrhage in the COVID-19 era: A tertiary hospital experience

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Background

The COVID-19 pandemic influenced all aspects of patient care on an international scale. A key factor in the transmissibility of this virus is the high level of shedding from the upper respiratory tract, even among asymptomatic individuals (1,2). In light of the above, The Royal College of Ophthalmologists recommended postponement of all routine surgery and face-to-face outpatient activity when the COVID-19 lockdown commenced (3).

In accordance with this, at University Hospitals Coventry and Warwickshire (UHCW) a number of our medical retina appointments were hence delayed and thereafter conducted virtually, with many patients preferring telephonic follow-ups rather than face-to-face. Protocols were instilled in line with The Royal College of Ophthalmologists guidance and followed by members of our clinics.

In the subsequent months, a large number of patients presented to clinic and eye casualty with progression of their ophthalmic conditions requiring urgent pan-retinal photocoagulation therapy (PRP). This project thus aimed to evaluate the impact of COVID-19 on ophthalmic patients requiring PRP laser.

Methods

Retrospective data collection was conducted to identify patients undergoing PRP laser between June 2020-November 2020. This was compared to the same time period from the previous year, 2019. Patients undergoing laser for rubeosis and vitreous haemorrhage (VH) were identified and further analysed. Data sources (Fig.1) and a sample data collection proforma have been shown below (Fig.2).

1.

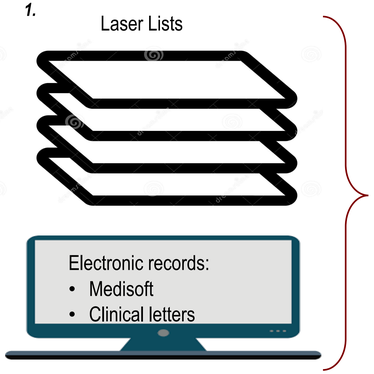


Figure 1. Sources of information utilised to identify patients and complete the data collection proforma.

2. **Data Collection Proforma:**

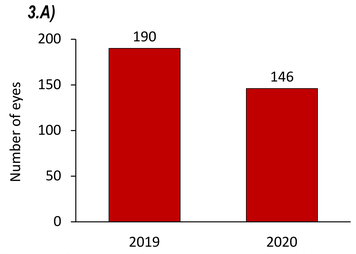
Hospital No	
Date	
Age	
Vision	
Gender	
Diagnosis	
Rubeosis	
Vitreous Haemorrhage	
IOP	
Previous PRP	
Previous Anti-VEGF	
No. of weeks from listing to laser	
No of weeks from previous clinic appointment	
Vision at last visit	
Cyclodiode	
Comments	

Figure 2. Data Collection Proforma

Results

Laser procedures conducted

3.A)



Indication

B)

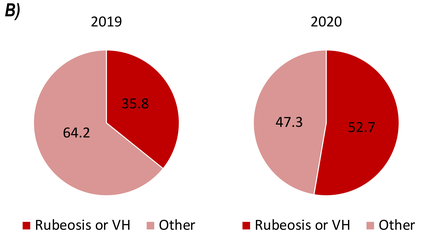


Figure 3. A) Total no. of eyes lasered in 2019 and 2020 (June- November) B) Indication for laser (%)

In 2019, 190 eyes underwent PRP laser, compared to 146 in 2020 (Fig. 3A). However, compared to 35.8% (68) patients in 2019, 52.7% (77) underwent laser for rubeosis and VH in 2020 (Fig. 3B). Although less number of eyes underwent PRP laser therapy in 2020, a greater proportion were lasered secondary to complications/ progression, namely rubeosis and VH.

Rubeosis and VH

Category	No. / % of total lasers 2019	2020
Total	68	77
% of total lasers	35.8 %	**52.7 %**
Avg. age	60.4	62.5
Male	46	49
Female	22	28
Rubeosis	13 (6.8%)	**21 (14.4%)**
VH	49 (25.8%)	**56 (38.3%)**
Both	6 (3.2%)	0 (0%)
Diagnoses		
PDR	54 (79.4%)	61 (79.2%)
RVO	9 (13.2%)	**14 (18.2%)**
Other	6 (1 patient CRVO +CRAO)	2

Table 1. Demographics of cohort with rubeosis and VH

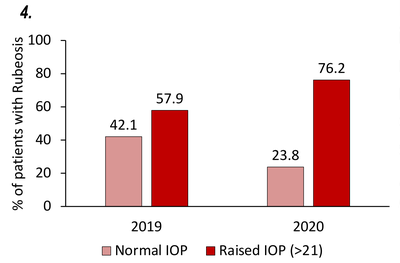
The demographic features of patients undergoing PRP laser for rubeosis and VH are shown in Table 1. It was noted that in 2019, 10% of patients who underwent PRP laser had rubeosis or rubeosis + VH compared to 14.4% patients in 2020, who had only rubeosis. In addition, the rate of VH also appeared to be proportionally increased in 2020.

Proliferative diabetic retinopathy (PDR) was the most common aetiology (>79%), followed by retinal vein occlusion (RVO) amongst this cohort. Other diagnoses include: ocular ischaemic syndrome (OIS) and retinal artery occlusion (RAO).

Whereas most patients were listed for laser via the medical retina clinic in 2019; in 2020 majority were listed via the eye casualty service.

Rubeosis & IOP

4.



In 2020, there was a substantial increase in patients presenting with raised pressures secondary to rubeosis (Fig. 4). These patients were often seen in eye casualty and subsequently listed for laser.

Figure 4. IOP in patients with Rubeosis (% of patients)

Clinic appointments

5.

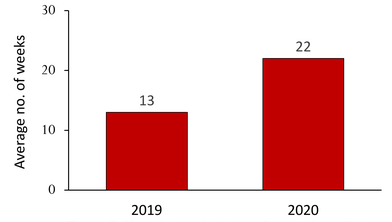


Figure 5. Mean interval between face-to-face clinic appointments.

Compared to 2019, an 8 week increase was observed between face-to-face clinic reviews in 2020 (Fig. 5). This represents the period of the lockdown. Although a number of patients were reviewed virtually, many did not report any issues, however a few weeks later went on to present to the eye casualty with raised IOP, rubeosis and/or VH.

Conclusions & Clinical Implications

Our data suggests a greater proportion of patients undergoing laser therapy in 2020 were due to complications of ophthalmic conditions, with patients having prolonged intervals between clinical reviews during the COVID-19 crisis. This study identifies the impact of the COVID-19 pandemic on some of our most vulnerable patient cohorts and compels us to determine how best to manage these conditions in future lockdowns and their subsequent relaxation. Strategies must be devised to make patients feel safe when attending hospital appointments, and education must be provided to them in order to reduce and prevent potentially sight threatening complications due to delayed presentations.

References

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