Impact of cessation of regular cataract surgery during the COVID pandemic on the rates of posterior capsular rupture and post-operative cystoid macular oedema

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•Purpose:

During the COVID-19 pandemic, elective cataract surgery (CS) ceased in accordance with national lockdowns. We investigated whether the consequent reduction of micro-surgical skills practice might lead to a higher risk of operative complications following resumption of CS.

•Setting: Public Sector University Hospital.

•Methods:

Single-centre, electronic note review of consecutive patients undergoing CS during three periods:

•1st February 2019 to 13th January 2020 (P1) prior to the pandemic

•3rd June 2020 to 11th January 2021 after 1st lockdown (P2)

•25th January to 30th July 2021 (P3) after and during second lockdown.

2276 operations occurred during P1, 999 during P2, and 846 during P3.

Intra-operative Percentage of Operations performed by Consultant Surgeons in Cases with PCR during P1 compared to P2 and P3

	P1 PCR Cases Median (Range)	P2 PCR Cases Median (Range)	P1 PCR vs P2 PCR Cases (p-value)	P3 PCR Cases Median (Range)	P1 PCR vs P3 PCR Cases (p-value)	P1 PCR vs P2+P3 PCR Cases (p-value)
Consultant : Non-Consultant	10:28	6:7	P=0.30	11:19	P=0.43	P=0.24

There was no difference in surgeons grade experiencing PCR during the three periods.

Vitreous Loss and Post-op Cystoid Macular Oedema Rates

	P1	P2	P1 vs P2 p-value	P3	P1 vs P3 p-value	P1 vs P2+P3 p-value
Intra-operative PCR Rate (%)	38/2276 (1.67%)	13/999 (1.30%)	P=0.54	30/846 (3.55%)	P=0.0022	P=0.14
Post-operative CMO Rate (%)	44/2276 (1.93%)	49/999 (4.9%)	P<0.0001	58/846 (6.86%)	P<0.0001	P<0.0001
Post-operative CMO cases with diabetes (%)	20/44 (45.45%)	16/49 (32.65%)	P=0.29	23/58 (39.66%)	P=0.69	P=0.36

During P1, the PCR rate was 1.67%, similar to P2 (1.30%, p=0.54), but lower than P3 (3.55%, p=0.002). During P2 and P3, there was a higher rate of postop CMO compared to P1 (4.9% and 6.86% vs 1.93% (p=0.0001), with no differences in the proportion of diabetics or cases with CMO in combination with PCR.

Intra-operative PCR Risk: Routine Cases vs PCR Cases

	P1 R Cases Median (Range)	P1 PCR Cases Median (Range)	P1 R vs PCR Cases p-value	P2 R Cases Median (Range)	P2 PCR Cases Median (Range)	P2 R vs PCR Cases p-value	P3 R Cases Median (Range)	P3 PCR Cases Median (Range)	P3 R vs PCR Cases p-value
Intra-operative PCR Risk (%)	1.90% (0.30-53.34)	2.03% (0.84-52.26)	P=0.83	2.00% (0.27-37.12)	2.18% (1.36-10.97)	P=0.18	1.87% (0.27-33.80)	2.71% (0.42-7.89)	P=0.08

There was no difference in PCR risk percentage scores between routine and PCR cases during P1 (1.90% vs (n=38) 2.03%, p=0.83), P2 (2% vs (n=13) 2.18%, p=0.18), or P3 (1.87% vs (n=30) 2.71%, p=0.08).

Conclusion:

•Following 9 months of cessation of elective CS, interspaced with periods of reduced CS volumes, PCR rates were increased across all surgeon grades occurring in cases with similar PCR risk percentage scores.

•During P3, the period following and during the second national lockdown, the rates of PCR more than doubled compared to pre-pandemic levels in P1. This was despite no apparent increase in the PCR risk percentage scores

•The proportion of complicated cases operated on by consultant surgeons was no different to pre-pandemic levels in P1

•CMO rates were increased in both post-COVID periods and not related to the proportion of diabetics or increased PCR rates.

•Interruptions in regular CS may have a detrimental effect on the micro-surgical skills of all ophthalmic surgeons resulting in increasing operative complications, and surgeon experience is not a mitigating factor

