

Supplemental Online Content

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eTable 1. Preliminary list of complications of retinal detachment surgery used to develop the Delphi survey

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This supplemental material has been provided by the authors to give readers additional information about their work.

eTable 1: Preliminary list of complications of retinal detachment surgery used to develop the Delphi survey

1. General complications	Score
1a. Intra-operative	(1-10)
Intra-operative subconjunctival haemorrhage	
Intra-operative chemosis	
Intra-ocular bleeding:	
- Subretinal haemorrhage not involving macula	
- Subretinal haemorrhage involving macula	
- Suprachoroidal haemorrhage not involving macula	
- Suprachoroidal haemorrhage involving macula	
1b. Post-operative	
Post-operative subconjunctival haemorrhage	
Post-operative chemosis	
Loss of visual acuity attributable to surgical procedure:	
- Moderate (loss of 3-5 lines on ETDRS chart)	
- Severe (loss of ≥ 6 lines on ETDRS chart)	
Visual field loss not related to retinal detachment but attributable to the surgical procedure:	
- Mild (<1 quadrant, not involving fixation)	
- Severe (≥ 1 quadrant, or involving fixation)	
Refractive changes	
- <2D	
- ≥ 2 D	
Corneal decompensation / severe corneal oedema	
IOP-related	
- Early high IOP self-resolving	
- Persistent high IOP manageable with drops	
- Persistent high IOP requiring surgery	
- Persistent hypotony (IOP < 5mmHg) without macular folds	
- Persistent hypotony with macular folds	
Phthisis	
IOL displacement	
IOL dislocation	
Serous choroidal detachment	
- Peripheral	
- Large, kissing	
Post-op suprachoroidal haemorrhage	
- Peripheral	
- Involving macula	
Symptomatic epimacular membrane	
Post-op macular oedema	
Post-op macular hole formation	
Persistent localised subretinal fluid	
- Peripheral, non-progressive	
- Submacular	
Retinal re-detachment due to PVR	
Endophthalmitis	
Sympathetic ophthalmia	
2. Complications relating to pars-plana vitrectomy	
2a. Intra-operative	
Unintended enlargement of sclerotomy	
Suprachoroidal / subretinal infusion	

Leaking ports at the end of surgery requiring suturing	
Cataract development intra-operatively (due to lens touch)	
- Without capsular breach	
- With capsular breach	
Related to tamponade agents:	
- Intra-operative displacement of perfluorocarbon liquid (PFCL) under the retina	
- Small bubble formation when inserting PFCL	
- 'Sticky' silicone oil at the time of removal	
Iatrogenic retinal tears	
Vitreo-retinal incarceration in sclerotomy	
2b. Post-operative	
Anterior displacement of tamponade agent	
- PFCL	
- Silicone Oil	
Subfoveal PFCL	
Subretinal displacement of silicone oil and heavy silicone oils	
Incomplete removal of tamponade agent	
Unexplained visual acuity loss associated with insertion / removal of silicone oil	
Emulsification of tamponade agents	
Non-infectious uveitis	
Leaky sclerotomy requiring suturing	
Post-op maculopathy related to light toxicity	
Post-op maculopathy related to dye toxicity	
Macular folds	
- Involving fixation	
- Not involving fixation	
Retinal slippage	
Retinal re-detachment due to new tear formation	
3. Complications relating to scleral buckling	
3a. Intra-operative	
Vitreo-retinal incarceration in sclerotomy at the time of draining of subretinal fluid	
Inadvertent scleral perforation when suturing explant	
Inadvertent drainage of subretinal fluid	
Air/ gas injection behind the lens	
Subretinal injection of air / gas	
Cataract development intra-operatively (due to lens touch, e.g. at time of injection of air/gas)	
- Without capsular breach	
- With capsular breach	
3b. Post-operative	
Complications relating to the buckle	
- Exposure	
- Migration	
- Infection	
Diplopia/ strabismus	
- Corrected with glasses / prisms	
- Requiring surgery	
4. Complications relating to pneumatic retinopathy	
4a. Intra-operative	
'Fish-egg' gas bubble formation	
Gas injection behind the lens	
Sub-retinal injection of gas	
Cataract development intra-operatively (due to lens touch, at the time of injection of gas)	
- Without capsular breach	
- With capsular breach	
4b. Post-operative	
New retinal break formation	
Retinal re-detachment due to new tear formation	

eTable 2a: Delphi Round 1 Results: Median and IQR scores for complications by technique: pars-plana vitrectomy (PPV), scleral buckle (SB), pneumatic retinopexy (PR), and whether intra-operative (IO) or post-operative (PO)

Category	Complication	Median	IQR
General IO	Subconjunctival haemorrhage	1	0
	Chemosis	1	1
	Subretinal haemorrhage not involving macula	3	1
	Subretinal haemorrhage involving macula	7	1.5
	Suprachoroidal haemorrhage not involving macula	5	3
	Suprachoroidal haemorrhage involving macula	9	2.5
General PO	Subconjunctival haemorrhage	1	0
	Chemosis	1	0
	Loss of visual acuity attributable to surgical procedure: Moderate (3-5 lines ETDRS chart)	6	2
	Loss of visual acuity attributable to surgical procedure: Severe (≥ 6 lines on ETDRS chart)	8	2
	Visual field loss not related to retinal detachment but attributable to surgical procedure: Mild (< 1 quadrant, not involving fixation)	5	3
	Visual field loss not related to retinal detachment but attributable to surgical procedure: Severe (≥ 1 quadrant or involving fixation)	7	1
	Refractive changes: $< 2D$	2	1
	Refractive changes: $\geq 2D$	4	2
	Corneal decompensation / severe corneal oedema	7	2
	Early raised IOP, self-resolving	2	1
	Persistently raised IOP manageable with drops	4	2
	Persistently raised IOP requiring surgery	7	2
	Persistent hypotony (IOP < 5 mmHg) without macular folds	6	2
	Persistent hypotony with macular folds	8	2
	Phthisis	10	0
	IOL displacement	4	1.5
	IOL dislocation	6	3
	Serous choroidal detachment: peripheral	3	1
	Serous choroidal detachment: large, kissing	7	2
	Suprachoroidal haemorrhage: peripheral	4	3
	Suprachoroidal haemorrhage: involving macula	8	2
	Macular oedema	4	1.5
	Macular hole formation	6	2
	Persistent localised subretinal fluid: peripheral, non-progressive	3	1
	Persistent localised subretinal fluid: submacular	5	2.5
	Retinal re-detachment due to new or worsening PVR	7	1
	Endophthalmitis	9	1
Sympathetic ophthalmia	9	2	
PPV IO	Unintended enlargement of sclerotomy	2	0.5
	Suprachoroidal / subretinal infusion	4	2
	Leaking ports at the end of surgery requiring suturing	2	1
	Cataract development intra-operatively (due to lens touch): Without capsular breach	4	3
	Cataract development intra-operatively (due to lens touch): With capsular breach	5	3
	Intra-operative displacement of perfluorocarbon liquid (PFCL) under the retina	6	3

	Small bubble formation when inserting PFCL	2	2
	'Sticky' silicone oil at the time of removal	3	3
	Iatrogenic retinal tears	4	1
	Vitreo-retinal incarceration in sclerotomy	5	3
PPV PO	Anterior displacement of tamponade agent: PFCL	3	1
	Anterior displacement of tamponade agent: Silicone oil	4	2
	Subfoveal PFCL	7	2
	Subretinal displacement of silicone oil and heavy silicone oils	7	2.5
	Incomplete removal of tamponade agent	5	3
	Unexplained visual acuity loss associated with insertion / removal of silicone oil	7	2
	Emulsification of tamponade agents	4	2
	Leaky sclerotomy requiring suturing	3	3
	Maculopathy related to light toxicity	7	2
	Maculopathy related to dye toxicity	7	2
	Macular folds: not involving fixation	4	1
	Macular folds: involving fixation	7	2
	Retinal slippage	6	2
	Retinal re-detachment due to new tear formation	7	2.5
	Non-infectious uveitis	4	3
SB IO	Vitreo-retinal incarceration in sclerotomy at time of draining of subretinal fluid	6	2
	Inadvertent scleral perforation when suturing explant	4	3
	Inadvertent drainage of subretinal fluid	3	1
	Air / gas injection behind the lens	3	3
	Sub-retinal injection of air / gas	6	2
	Cataract development intra-operatively (due to lens touch e.g. at time of injection of air/gas): Without capsular breach	4	2
	Cataract development intra-operatively: With capsular breach	7	3
SB PO	Exposure of the buckle	3	2
	Infection of the buckle	5	3
	Migration of the buckle	4	2
	Diplopia / strabismus: Corrected with glasses / prisms	4	2.5
	Diplopia / strabismus: Requiring surgery	6	3
PR IO	'Fish-egg' gas bubble formation	3	2
	Gas injection behind the lens	3	3
	Sub-retinal injection of gas	6	2
	Cataract development intra-operatively (due to lens touch at the time of gas injection): Without capsular breach	4	2.5
	Cataract development intra-operatively: With capsular breach	7	3
PR PO	New retinal tear formation	4	3
	Retinal re-detachment due to new tear formation	6	4

eTable 2b: Delphi Round 2 Results: Median and IQR scores for complications by technique: pars-plana vitrectomy (PPV), scleral buckle (SB), pneumatic retinopexy (PR), and whether intra-operative (IO) or post-operative (PO)

	Complication	Median	IQR
General IO	Subretinal haemorrhage not involving macula, <= 1 quadrant	3	2
	Subretinal haemorrhage not involving macula, > 1 quadrant	4	2
	Subretinal haemorrhage involving macula, <= 3 disc areas	7	2
	Subretinal haemorrhage involving macula, > 3 disc areas	8	2
	Suprachoroidal haemorrhage not involving macula and no kissing	5	2.75
	Suprachoroidal haemorrhage involving macula or kissing	9	2
General PO	Visual field loss not related to retinal detachment but attributable to surgical procedure: Not affecting driving license	4	2
	Visual field loss not related to retinal detachment but attributable to surgical procedure: Affecting driving license	7	2
	Early hypotony, self-resolving	2	1
	IOL dislocation	6	1
	Suprachoroidal haemorrhage: not involving macula and no kissing	5	2
	Suprachoroidal haemorrhage: involving macula or kissing	9	1
	Persistent localised subretinal fluid: submacular	5	2
PPV IO	Suprachoroidal infusion	5	2
	Subretinal infusion	5	2.75
	Cataract development intra-operatively (due to lens touch): Without capsular breach	4	2
	Cataract development intra-operatively (due to lens touch): With capsular breach	5	1
	Intra-operative displacement of perfluorocarbon liquid (PFCL) under the retina	6	1
	Vitreo-retinal incarceration in sclerotomy	5	2
PPV PO	Subretinal displacement of silicone oil and heavy silicone oils	7	1
	Incomplete removal of tamponade agent	5	1
	Leaky sclerotomy requiring suturing	3	1
	Retinal re-detachment due to new tear formation	7	1
	Non-infectious uveitis	4	1
SB IO	Inadvertent scleral perforation when suturing explant	4	1
	Air / gas injection behind the lens (pre-anterior hyaloid)	4	1
	Cataract development intra-operatively: With capsular breach	7	1
SB PO	Early exposure of the buckle (<1 week)	5	2
	Delayed exposure of the buckle (after 1 week)	4	2
	Infection of the buckle	5	1.75
	Early migration of the buckle (<1 week)	5	2.75
	Delayed migration of the buckle (after 1 week)	5	1
	Diplopia / strabismus: Corrected with glasses / prisms	4	1
	Diplopia / strabismus: Requiring surgery	6	1.75
PR IO	'Fish-egg' gas bubble formation not affecting view of retina	2	1
	'Fish-egg' gas bubble formation affecting view of retina	4	1

	Gas injection behind the lens (pre-anterior hyaloid)	4	1
	Cataract development intra-operatively (due to lens touch at the time of gas injection): Without capsular breach	4	1
	Cataract development intra-operatively: With capsular breach	7	1
PR PO	New retinal tear formation	4	1
	Retinal re-detachment due to new tear formation	6	2

eTable 3: Complications ranked by severity scores and classified as mild (median scores 1-4), moderate (median scores 5-7) and severe (median scores 8-10)

Complication	Severity Score
MILD	
Chemosis	1
Subconjunctival haemorrhage	1
Refractive changes: < 2D	2
Early hypotony, self-resolving	2
Early raised IOP, self-resolving	2
Leaking ports at the end of PPV requiring suturing	2
Small bubble formation when inserting PFCL in PPV	2
Unintended enlargement of the sclerotomy in PPV	2
Fish-egg' gas bubble formation not affecting view of retina in PR	2
Subretinal haemorrhage not involving macula, ≤ 1 quadrant	3
Serous choroidal detachment: peripheral	3
Persistent localised subretinal fluid: peripheral, non-progressive	3
Anterior displacement of PFCL during PPV	3
Leaky sclerotomy during PPV requiring suturing	3
Subretinal haemorrhage not involving macula, > 1 quadrant	4
Visual field loss attributable to the surgical procedure: Not affecting driving license	4
Refractive changes: ≥ 2D	4
Persistently raised IOP manageable with drops	4
IOL displacement	4
Macular oedema	4
Cataract development intra-operatively (due to lens touch): Without capsular breach	4
Iatrogenic retinal tears following PPV	4
Anterior displacement of Silicone oil following PPV	4
Emulsification of tamponade agent following PPV	4
Macular folds: not involving fixation following PPV	4
Non-infectious uveitis following PPV	4
Inadvertent scleral perforation when suturing explant during SB	4
Air / gas injection behind the lens (pre-anterior hyaloid) during SB or PN	4
Delayed exposure of the buckle (after 1 week)	4
Diplopia / strabismus: Corrected with glasses / prisms following SB	4
Fish-egg' gas bubble formation affecting the view of the retina in PR	4
New retinal tear formation postoperatively following PR	4
MODERATE	
Suprachoroidal haemorrhage not involving macula and no kissing*	5
Persistent localised subretinal fluid: submacular	5
Cataract development intra-operatively (due to lens touch): With capsular breach during PPV	5
Suprachoroidal infusion during PPV	5
Subretinal infusion* during PPV	5
Vitreo-retinal incarceration in sclerotomy during PPV	5
Incomplete removal of tamponade agent following PPV	5
Early exposure of SB (<1 week)	5
Infection of SB	5
Early migration of SB(<1 week)*	5
Delayed migration of SB (after 1 week)	5
Loss of visual acuity attributable to surgical procedure: Moderate (3-5 lines ETDRS chart)	6
Persistent hypotony (IOP < 5mmHg) without macular folds	6
IOL dislocation	6

MODERATE	
Macular hole formation	6
Intra-operative displacement of PFCL under the retina during PPV	6
Retinal slippage during PPV	6
Vitreo-retinal incarceration in sclerotomy at time of draining of subretinal fluid during SB	6
Sub-retinal injection of air / gas during SB or PR	6
Diplopia / strabismus: Requiring surgery post SB	6
Retinal re-detachment due to new tear formation post PR	6
Subretinal haemorrhage involving macula, ≤ 3 disc areas	7
Visual field loss not related to retinal detachment but attributable to surgical procedure: Affecting driving license	7
Corneal decompensation / severe corneal oedema	7
Persistently raised IOP requiring surgery	7
Serous choroidal detachment: large, kissing	7
Retinal re-detachment due to new or worsening PVR	7
Subfoveal PFCL post PPV	7
Subretinal displacement of silicone oil and heavy silicone oils post PPV	7
Unexplained visual acuity loss associated with insertion / removal of silicone oil post PPV	7
Maculopathy related to light toxicity post PPV	7
Maculopathy related to dye toxicity post PPV	7
Macular folds: involving fixation post PPV	7
Retinal re-detachment due to new tear formation post PPV	7
Cataract development intra-operatively: With capsular breach post SB or PR	7
SEVERE	
Subretinal haemorrhage involving macula, > 3 disc areas	8
Loss of visual acuity attributable to surgical procedure: Severe (≥ 6 lines on ETDRS chart)	8
Persistent hypotony with macular folds	8
Suprachoroidal haemorrhage involving macula or kissing	9
Suprachoroidal haemorrhage: involving macula or kissing	9
Endophthalmitis	9
Sympathetic ophthalmia	9
Phthisis	10

PPV = pars plana vitrectomy; SB = scleral buckle; PR = pneumatic retinopexy; PFCL = perfluorocarbonyl liquid.

*Interquartile range = 2.75 (i.e. did not reach consensus)