

A Survey of Pterygium Surgery in Thailand 2010

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Objective: To survey and investigate the pterygium surgery among Thai ophthalmologists in 2010.

Material and Method: Questionnaires were distributed to 930 ophthalmologists who were the member of the Ophthalmological Society and Royal Colleges of Ophthalmologists of Thailand. Data received from 414 respondents were assessed and analyzed.

Results: The majority of respondents were male (53.1%) while 46.9 % were female. Visual disturbance (57.6%) was the most common indication for surgery. Most of the respondents (41.1%) preferred pterygium excision combined with conjunctival autograft transplantation. Bare scleral technique was the second most common preferential procedure. Recurrence was the main postoperative complication.

Conclusion: Although there was a great variation pterygium surgical pattern, excision with conjunctival autograft transplantation was the major preferential practice. Recurrent pterygium was the most common complication.

Keywords: Survey, Pterygium, Conjunctival autograft transplantation, Pterygium excision, Recurrent pterygium

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Pterygium was an ocular surface disease that affects human populations around the world, common in tropical and subtropical area. Despite the conservative treatment with medical prescription was used to relieve ocular irritation symptom, the reason of disturbance visual function and cosmetic problem were the main indications for pterygium surgical excision⁽¹⁾.

For the last few years, surgical treatment of pterygium had been rapidly developed and applied of various new strategies in order to deteriorate the recurrent rate and ocular complications⁽²⁻⁸⁾. Therefore, the aim of the present study was to survey the experience and preferential practice pattern of Thai ophthalmologists in the management of pterygium. To the authors' knowledge, the presented study demonstrated the first survey on pterygium surgical treatment in Thailand.

Material and Method

In January 2011, the authors mailed questionnaires with stamp-reply envelopes to 930 Ophthalmological Society and Royal Colleges of Ophthalmologist of Thailand members. To maintain

the confidentiality of the respondents, returned envelopes and questionnaires were not marked or labeled. All questionnaires were requested to return within three months after mailing. There was no reward for returning the questionnaires. The research protocol was approved by the Ethics Committee of Faculty of Medicine, Chiang Mai University.

Results

Replies were received from 414 (44.5%) respondents prior to the cutoff date of May 31, 2011, 220 (53.1%) were male and 194 (46.9%) were female.

Demographic data

The majority of respondents were in the 31 to 50 year age group, accounting for 66.2% of all respondents, 24.6% were between 51 and 60 years, 2% were in the 26 to 30 year age group, and 7.2% were over 60 years. The geographic distribution of the respondents is shown in Table 1. Most of the respondents (74.5%) who were currently performing pterygium surgery were general ophthalmologists. Ninety-six respondents (23.3%) were predominantly practicing in Bangkok.

Surgery scoreboard

Three hundred ninety nine respondents (96.4%) were doing pterygium surgery. The volume profile for pterygium surgery showed that 61.9%

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Table 1. Geographic distribution of the respondent ophthalmologists

Location of respondents	Number of respondents (%) (n = 414)
Central area	239 (57.73)
Northern area	74 (17.87)
Northeastern area	46 (11.11)
Southern area	38 (9.18)
Eastern area	17 (4.11)

of the surgeons were doing one to five procedures, 20.4% doing six to 10 procedures, and 8.1% doing less than one procedure per month. An estimate of the annual pterygium surgery from all respondents was derived from monthly volume. There were 2,277 pterygium surgeries.

Anesthesia techniques

In pterygium procedure, the combined topical eye drop and subconjunctival anesthesia was used by 60.4% of respondents while 83 respondents (20.8%) preferred subconjunctival injection. None of the respondents used retrobulbar injection.

Pterygium surgery

Preferred techniques of pterygium surgery are shown in Table 2. Among all respondents, 164 respondents (41.1%) preferred excision combined with conjunctival autograft transplantation with or without

adjunctive therapy. Ninety-three respondents (23.3%) performed bare scleral technique alone.

The main suture material (80.7%) used in pterygium surgery was 10-0 nylon while polyglactin 910 was used, accounting for 12.8%. Most of the respondents who performed pterygium surgery used interrupted and continuous suturing technique in 61.7% and 29.3%, respectively. Combined interrupted and continuous suturing technique was 9.0%.

Sixty-three percentage of the respondents preferred blade for pterygium removal while others preferred Westcott scissors. Most of the respondents (72.9%) who performed amniotic membrane transplantation technique chose hospital made amniotic membrane for grafting. Others preferred amnion source from the Thai Red Cross Society. The most common region (74.5%) where the conjunctiva was harvested for grafting was superior quadrant. The second most common (14.6%) was superotemporal quadrant.

Preoperative care

Most of the surgeons (63.7%) did not routinely use topical eye drop as preoperative medication but 145 surgeons (36.3%) used them prior to pterygium surgery. Table 3 shows the percentage and number of preoperative medication.

Postoperative care

The mean follow-up time was three months after surgery. Half of the respondents used topical

Table 2. Surgical technique used in pterygium surgery and recurrent rate

Surgical technique	Number of respondents (%) (n = 399)	Number of recurrence (%)
Bare sclera	93 (23.3)	69.4
Bare sclera with MMC/5-FU	20 (5.0)	7.3
Bare sclera with radiation	2 (0.5)	1.0
Simple closure	13 (3.3)	23.5
Simple closure with MMC/5-FU	2 (0.5)	33.0
Rotational flap	16 (4.0)	3.4
Conjunctival flap	10 (2.5)	4.3
Conjunctival flap with MMC/5-FU	2 (0.5)	5.0
CAG	144 (36.0)	3.0
CAG with MMC/5-FU	19 (4.8)	1.8
CAG with steroid injection	1 (0.3)	5.0
AMT	52 (13.0)	11.1
AMT with MMC/5-FU	22 (5.5)	6.3
AMT with steroid injection	3 (0.8)	2.3
Total	399 (100)	

MMC/5-FU = mitomycin C or 5-fluorouracil; CAG = conjunctival autograft transplantation; AMT = amniotic membrane transplantation

fixed combination steroid and antibiotic as a routinely postoperative medication as demonstrated in Table 4. Seventy-six respondents (19.0%) prescribed topical steroid and topical antibiotic. A few of the respondents also prescribed oral antibiotic such as amoxicillin, ciprofloxacin with topical steroid and topical fixed combination of steroid and antibiotic to the patients.

Intraoperative complications

One hundred thirty eight surgeons (34.6%) reported that intraoperative bleeding was the most common complication while sixty-six surgeons (16.5%) reported the button-hole graft was the second most common complication. Other intraoperative complications such as excessive cauterization, thinning of cornea or sclera by dissection, damage to medial rectus muscle were also found (Table 5). One hundred eight surgeons (27.0%) reported no complication found during the surgery.

Postoperative complications

The most common postoperative complication was recurrent pterygium, accounting for 46.9% of all respondents. The second most common complication was pyogenic granuloma, accounting for 15.5% of all respondents. Other postoperative complications were also reported (Table 6). Two surgeons reported steroid-induced glaucoma that improved after tapering topical steroid. Nine surgeons found no postoperative complication.

Discussion

It had been generally accepted that surgical removal was the mainstay in pterygium treatment. However, there was much diversity in surgical techniques including pre and postoperative medications. Nowadays, the recurrent rate after excision seemed to have been significantly decreased with the newer methods of treatment. Because only 414 respondents

Table 3. Preoperative medications

Preoperative medications	Number of respondents (%) (n = 399)
None	254 (63.7)
Topical antibiotic	12 (3.0)
Topical steroid	42 (10.5)
Topical fixed combination of steroid and antibiotic	32 (8.0)
Topical antibiotic and topical steroid	10 (2.5)
Topical antibiotic and topical fixed combination of steroid and antibiotic	5 (1.3)
Topical antibiotic and artificial tears	4 (1.0)
Topical steroid and antihistamine and vasoconstrictor	11 (2.7)
Topical fixed combination of steroid and antibiotic and phenylephrine	4 (1.0)
Topical steroid and topical fixed combination of steroid and antibiotic	7 (1.7)
Topical steroid and topical fixed combination of steroid and antibiotic and artificial tears	6 (1.5)
Artificial tears and antihistamine and vasoconstrictor	12 (3.1)

Table 4. Postoperative medications

Postoperative medications	Number of respondents (%) (n = 399)
Topical antibiotic	12 (3.0)
Topical steroid	7 (1.8)
Topical fixed combination of steroid and antibiotic	200 (50.1)
Topical antibiotic and topical steroid	76 (19.0)
Topical antibiotic and topical fixed combination of steroid and antibiotic	10 (2.6)
Topical antibiotic and artificial tears	3 (0.8)
Topical steroid and artificial tears	11 (2.7)
Topical fixed combination of steroid and antibiotic and artificial tears	64 (16.0)
Topical steroid and topical fixed combination of steroid and antibiotic	14 (3.5)
Topical steroid and topical fixed combination of steroid and antibiotic and oral ciprofloxacin	2 (0.5)

Table 5. Intraoperative complications

Intraoperative complications	Number of respondents (%) (n = 399)
Intraoperative bleeding	138 (34.6)
Button hole graft	66 (16.5)
Thinning of cornea or sclera by dissection	38 (9.5)
Excessive cauterization	25 (6.3)
Damage to medial rectus muscle	10 (2.5)
Reversal of conjunctival graft	12 (3.0)
Damage to canalicular system	1 (0.3)
Perforated globe by needle	1 (0.3)

Table 6. Postoperative complications

Postoperative complications	Number of respondents (%) (n = 399)
Recurrence	187 (46.9)
Corneoscleral necrosis	14 (3.5)
Scleritis	7 (1.8)
Infective keratitis	6 (1.5)
Inclusion cyst	31 (7.8)
Pyogenic granuloma	62 (15.5)
Dellen	44 (11.0)
Persistent astigmatism	21 (5.3)
Persistent epithelial defect	6 (1.5)
Graft retraction	10 (2.5)
Steroid-induced glaucoma	2 (0.5)

in this survey had returned the questionnaires to the authors, results might not exactly reflect the opinions of all Thai ophthalmologists. The sampling population might have represented a group of general ophthalmologists who were more active in the field of pterygium surgery. This sample size with a response rate of approximately 44.5% was lower than that in Victorian ophthalmologist survey done by Taylor et al in 1998 (86%)⁽⁹⁾. This response was comparable to the study of current trend in cataract survey in Thailand done by Chaidaroon et al in 2005 (41.3%)⁽¹⁰⁾. There were approximately 2277 pterygium surgeries performed in 2010 in Thailand, which reflected that a public health problem remained. This number might help to consider cost of the nation's health budget in management of pterygium in future. The preferred surgical technique for the treatment of pterygium was excision combined with conjunctival autograft transplantation with or without adjunctive therapy. Bare scleral technique was the second most common

preferential procedure. The worrisome of recurrence seems to be a major problem of complication. The causes of the recurrence might be from bare sclera technique, preoperative large pterygium, or ultraviolet exposure postoperatively. With the high rate of recurrence, bare sclera technique was a less acceptable method in pterygium treatment⁽⁵⁾. However, bare sclera technique had been performed in high percentage in the present study because it might relate to a short time of surgery and less surgical skill when compared with excision combined with conjunctival autograft transplantation.

The result of the present study might determine the experience and preferred treatment pattern. This report was not aimed to persuade as a treatment guideline for pterygium guideline with respect to provided information. Thus, the authors believed that the present information described the trend of pterygium surgery and practice styles and preferences of ophthalmologists in Thailand. A longer term, continuing study would further define the direction of the medical profession. The present survey had several limitations. Most of the questions that were presented in the questionnaires required the percentage from the responders. Moreover, most questions were in multiple choice form rather than open-ended form. The time of questionnaires recollecting was limited then answer of the questions might not be accurate. This treatment was related only to primary pterygium not a recurrent one.

Conclusion

There were many diversity of pterygium surgical patterns. However, pterygium excision combined with conjunctival autograft transplantation was the vast majority of preferential procedure. Recurrent pterygium was the most common complication.

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Potential conflict of interest

None.

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การผ่าตัดต้อเนื้อในประเทศไทย สํารวจปี พ.ศ. 2553

วินัย ชัยครุณ, มนชิต ทองเขาอ่อน, ดำรงค์ วิวัฒน์วงศ์วนา, อัจฉรียา วิวัฒน์วงศ์วนา

วัตถุประสงค์: เพื่อสำรวจและศึกษาการผ่าตัดต้อเนื้อของจักษุแพทย์ไทยปี พ.ศ. 2553

วัสดุและวิธีการ: ส่งแบบสอบถามจำนวน 930 ฉบับ ไปถึงจักษุแพทย์ซึ่งเป็นสมาชิกสมาคมจักษุแพทย์ และราชวิทยาลัยจักษุแพทย์แห่งประเทศไทย นำแบบสอบถามที่ตอบคืนมามีจำนวน 414 ฉบับ มาประเมินและวิเคราะห์

ผลการศึกษา: ผู้ตอบแบบสอบถามเป็นเพศชายร้อยละ 53.1 และเป็นเพศหญิงร้อยละ 46.9 ข้อบ่งชี้หลักในการผ่าตัดคือ การรบกวนการมองเห็นร้อยละ 57.6 ส่วนใหญ่ของผู้ตอบแบบสอบถามนิยมการผ่าตัดต้อเนื้อร่วมกับการปลูกถ่ายเยื่อตาของผู้ป่วยเองร้อยละ 41.1 วิธีรองลงมาคือ ผ่าตัดต้อเนื้อจนเหลือเฉพาะเปลือกลูกตา ผลแทรกซ้อนหลังผ่าตัดที่พบบ่อยที่สุดคือการกลับเป็นซ้ำของโรค

สรุป: ถึงแม้ว่ารูปแบบการผ่าตัดต้อเนื้อมีหลากหลาย แต่การผ่าตัดต้อเนื้อร่วมกับการปลูกถ่ายเยื่อตาของผู้ป่วยเองได้รับความนิยมมากที่สุด การกลับเป็นต้อเนื้ออีกเป็นผลแทรกซ้อนที่พบบ่อยที่สุด
