



SIEP'S TEST- TO ENSURE INTEGRITY OF CATARACT SURGERY WOUNDS

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ABSTRACT **Background and objectives-** to ensure integrity of cataract surgery wounds
Methods- A randomized prospective study was done consisting of 25 patients who underwent cataract surgery at our hospital during six month period after approval by ethical committee. The data obtained were tabulated, analysed, assessed and formulated.
Results- On evaluating our 25 patients we found that 10 patients(40%) had post op wound leak mainly due to surgical complications like premature entry comprising 50% followed by mature cataract with posterior capsular rent and small pupil comprising of 20% each and floppy iris syndrome comprising of 10%.
Conclusions- The simple procedure is very handy in peripheral areas where the getting total asepsis is difficult. Identifying THE LEAK is of prime importance which can reduce further complications.

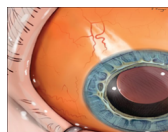
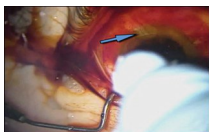
KEYWORDS : Sieps test, betadine, Small incision cataract surgery, operative complications

Introduction:

Sutureless clear corneal incisions (CCI) have become standard of care when performing routine cataract surgery due to multiple advantages; these advantages include the decreased induction of corneal astigmatism from a suture, reduced cost of surgery without suture, and the relative ease of creating a presumed watertight corneal incision1. However, there is concern that leaving incisions without definitive closure may increase the risk of wound leaks. Betadine acts as a riverbank for the outflow of aqueous, outlining the speed, location and quantity of the leak. The procedure is simple and straightforward. It is easily performed, and the findings are precise. The side benefit is that Betadine applied at the end of a surgical procedure sterilizes the surface of the eye. Aqueous leak delineated by Sieps Betadine test2. The "Sieps test" name is derived from the college nickname of surgeon Steven B. Sieps. The Betadine Sieps test can assure a surgeon that he has a watertight wound while he is sterilizing the ocular surface at the end of a surgical case.

METHODS & MATERIALS: A clinical observational study was undertaken at the outpatient department of Eye, Guru Gobind Singh Government Hospital, Jamnagar in a 6 month duration span to see proper integrity of wound closure at the end of operation. 25 patients who were undergoing small incision cataract surgery irrespective of age, sex, history of hypertension /diabetes type 1 or 2 / blood transfusion /tuberculosis / asthma were included.

Procedure- We used 2-3 drops of Betadine 5% (povidone-iodine) at the end of each case not only to sterilize the surface of the eye but also as a disclosing dye to demonstrate any wound leaks. Once everything is "sealed up" near the end of the case, the globe is inflated to a normal pressure. A finger tension ballottement is used to make sure the globe is firm. The nurse then administers 2-3 drops of Betadine 5% over the wounds. If there is leaking aqueous, it is obvious. The Betadine discloses the clear flow from the eye, outlining leaking aqueous. In sensitive patients who mentioned a burning sensation, a drop of paracaine was added just before placing the Betadine. At the end of the case, all traces of the Betadine was fully flushed out to limit discomfort and avoid any secondary inflammation or corneal changes.

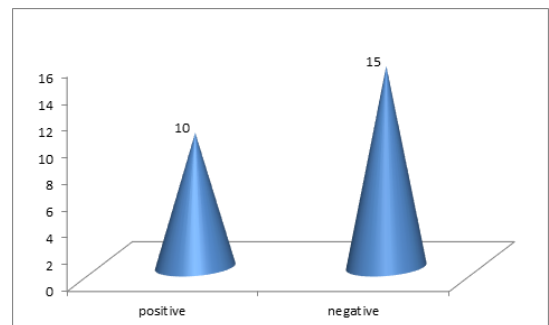


Statistics: The data obtained were collected, analysed, assessed and tabulated and was entered into an Excel spreadsheet and then transferred to SPSS software (Statistical Package for Social Sciences, version 22, SPSS Inc, Chicago, IL, USA) for analysis.

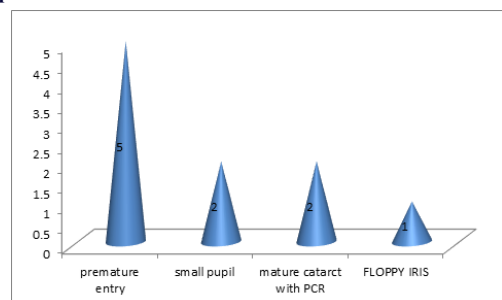
RESULTS:

The number of patients having a positive sieps test with the corresponding graph-1

Out of the total 50 patients 10 patients had positive sieps test.

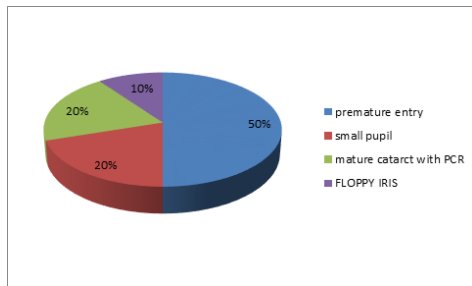
Graph-1

Graph-2 elicits the number of patients having complicated procedure leading to positive sieps test

Graph-2

Premature entry was the maximum complication comprising 50% followed by small pupil and mature cataract with posterior capsular rent comprising of 20% each and floppy iris syndrome consisting of 10% as depicted in graph-3

Graph-3



DISCUSSION:

The literature is replete with examples of complications and endophthalmitis as a result of wound leaks, with one study showing the incidence of contamination is 44 times more frequent³. With a leaky clear corneal incision: If fluid is coming out at some point, most likely after a blink, the eye wound sucks in fluid from the eye surface, leading to intraocular contamination. One study found that in 100 cases, almost one-third of the incisions leaked⁴. Another case report demonstrated fluid egress in a seemingly watertight 1.4mm CCI⁵. There is also documented case of iris prolapse through the CCI, 2 weeks after cataract surgery, due to postoperative vomiting⁶. Hence, sealing leaking ocular incisions is critical to decreasing the incidence of endophthalmitis.

CONCLUSION-

Cataract surgery is the most commonly performed surgery in the world giving sight to millions. The need of providing maximum asepsis has led to the development for more cumbersome guidelines, aseptic precautions etc. The simple procedure is very handy in peripheral areas where the getting total asepsis is difficult. Identifying THE LEAK is of prime importance which can reduce further complications. So, here SIEP's TEST plays an important role in identifying any postoperative wound leaks. Special care must be taken in patients who underwent complications leading to a prolonged procedure that wound leakage is imminent and due care like suturing the meticulously is mandatory. This quick test allows for assurance of wound integrity and a watertight closure before the patient leaves the OR. In addition, it avoids further complications from the ingress of fluids and debris on the ocular surface. This is especially important with new wound closure adhesives. A surgeon can now leave the operative arena knowing that the incision site is closed and watertight, reducing the chance of low eye pressure, lens rotation, lens dislocation or endophthalmitis. It is also important to achieve a watertight seal in patients with diabetes or immunocompromised individuals, who can be at increased risk of infection. Patients who are monocular or are methicillin-resistant *Staphylococcus aureus* positive may also benefit from watertight incision.

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REFERENCES

1. Miffilin MD et.al.J Cataract Refract Surg.2012;doi:10.1016/j.jcrs.2012.04.019
2. Steven B. Siesper, MD, FACS. Ocular Surgery News U.S Edition, October 25,2014
3. Wallin T,et.al.J Cataract Refract Surg.2005;doi:10.1016/j.jcrs.2004.10.057
4. Chee SP. Clear corneal incision leakage after phacoemulsification-detection using povidone iodine 5% Int Ophthalmol. 2005;26(4-5):175-179.
5. Stratas BA. Clear corneal paracentesis: a case of chronic wound leakage in a patient having bimanual phacoemulsification. J Cataract Refract Surg. 2005;31(5):1075.
6. Slettedal JK, Bragadóttir R. Total iris expulsion through a sutureless cataract incision due to vomiting. Acta Ophthalmol Scand. 2005;83(1):111-112.