

LEAD ARTICLE

Antibiotics in Thyroid Surgery- Do we need it?

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INTRODUCTION:

Antibiotic prophylaxis refers to the prevention of infectious complications using antimicrobial therapy. Antibiotic prophylaxis is most commonly used prior to surgery especially if there is a breach in mucosal surfaces. Even when sterile techniques are adhered to, surgical procedures can introduce bacteria and other microbes in the blood (causing bacteremia), which can colonize and infect different parts of the body. Postoperative wound infections have an enormous impact on patients' quality of life and contribute substantially to the financial cost of patient care. The potential consequences for patients range from increased pain and care of an open wound to sepsis and even death.

Antibiotic Prophylaxis is uniformly recommended for all clean-contaminated, contaminated and dirty procedures. It is considered optional for most clean procedure like thyroidectomy, although it may be indicated for certain patients and clean procedures that fulfill specific risk criteria. Timing of antibiotic administration is critical to its efficacy. The first dose should always be given before the procedure, preferably within 30 minutes before placing incision. Re administration at one to two half-lives of the antibiotic is recommended if duration is prolonged. In general, postoperative administration is not recommended. Antibiotic selection is influenced by the organism most commonly causing wound infection in the specific procedure and by the relative costs of available agents.

Antibiotics and Thyroidectomy:

Thyroidectomy is a clean surgical procedure. Prophylactic antibiotics are not indicated in most of the patients undergoing Hemi or Total

thyroidectomy. However most surgeons in the developing world still follow the tradition of antibiotic prophylaxis following thyroid surgery with the hope that it will protect the wound from surgical site infection.¹ In thyroid surgery except in trans oral thyroidectomy where the oral mucosa is breached antibiotic prophylaxis need to cover only gram positive skin flora mainly saprophytic microorganisms staphylococcus epidermis and staphylococcus aureus. The oral microbial flora includes anaerobic bacteria such as Actinomyces, Bacteroides, Bifidobacterium, Eubacterium Fusobacterium and fungi. An efficient innate immunity prevents bacterial infection. Amoxicillin with clavulanic acid is the preferred prophylactic antibiotic. In this setting antibiotic prophylaxis can be extended for 5 days.²

In a study conducted by Moalem J et al 275 endocrine surgeons responded to an Internet based questionnaire regarding antibiotic prophylaxis use for thyroidectomy and parathyroidectomy. 62% of surgeons never used prophylactic antibiotics and they found surgeons from community hospitals, surgeons from American and surgeons in Asia when compared to European surgeons used Prophylactic Antibiotics more often. When Surgeons were asked if they would want a dose of antibiotics given if they themselves were to undergo thyroidectomy 68% of surgeons stated that they would not choose antibiotics.³

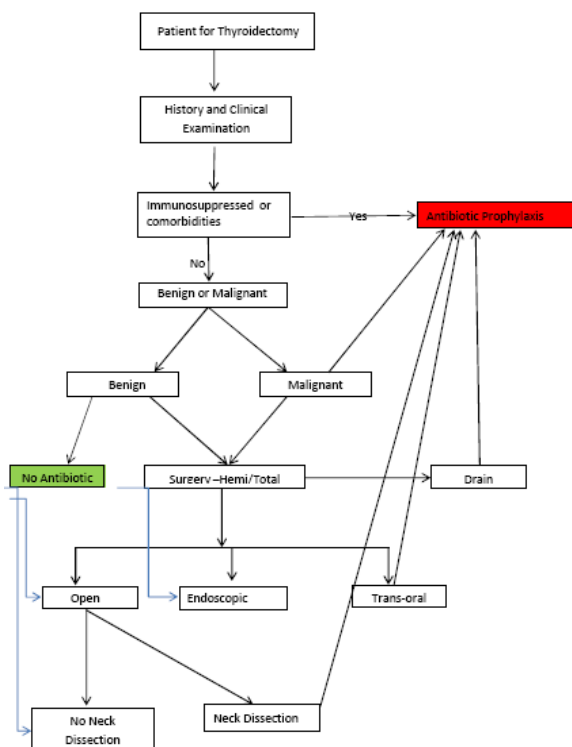
One study from India Mani et al compared a single day versus five day Antibiotic regimen found that prolonged antibiotic prophylaxis led to extra expenditure, along with the prolonged hospital stay and can be a potential risk for developing antibiotic resistance⁴. In a study of complications of thyroid Surgery: Analysis of a

multicentric study on 14934 patients operated upon in Italy over 5 years they found the wound infection was 0.3% out of 2% of all the complications. The thyroid lobectomy patients had 0.13% of wound infection and 0.4% in Total thyroidectomy patients.⁵

A nested Case-control study on the risk of surgical site infection after Thyroidectomy by Salem F A, where they included 9494 Surgeries, 109 (1.2%) patients had surgical site infection. They found Lymph node dissection and drain are independent risk factors for surgical site infection after thyroidectomy.⁶ A Prospective randomized controlled study by Uruno T et al from Japan where there were three groups Group A which received 2g of Piperacillin, Group B which received 1g of Cefazolin and Group C which did not receive any antibiotic. They found that antimicrobial prophylaxis did not prevent surgical site infection after clean thyroid Surgery.⁷

CONCLUSION:

Use of antibiotics following any surgery should be judicious and minimal and thyroidectomy is no different. We propose the algorithm given below for antibiotics in Thyroid Surgery.



Algorithm for efficient use of Antibiotic prophylaxis in Thyroid Surgery.

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