Is It Necessary to Invaginate the Appendix Stump ?

Ali A.AL-katib
Dept. of Surgery, College of MedicineBabylon University,Hilla,Babylon ,Iraq

Abstract

To assess the need for certain operative detail is not necessary especially during appendicectomy i.e.the invagination of the appendicularstump.

230 patients selected from the total of 964 patients underwent appendicectomy in Hilla teaching Hospital (Hilla-Babylon-Iraq) from 1st of June 2000 to the 1st of May 2001. they were divided into groups.Group I involve 110 patients in whom the appendix stump ligated invaginated. In group 11,which involve 120 patients in whom the appendix stump ligated but not invaginbated. 716 patients were excluded from the study because they needed antibiotics or the appendix was found perforated or they needed drain or the patient was diabetic or immuno-suppressed.

No significant differences in both groups regarding wound infection and other complications or hospital stay.

We concluded that certain operative steps are not necessary by which we may reduce operative time and reduce the need for catgut which is important to us in these days.

الخلاصه

لتثبيت انه بالامكان الاستغناء عن بعض المراحل التكنيكيه اثناء اجراء عملية الزائده الدوديه واثبات كونها غير ضروريه .

هذه الدراسه شملت 230 مريض تم اختيارهم من اصل 946 مريض اجريت لهم عملية استئصال الزائـــده الدوديـــه . تـــم استبعاد 716 مريض ل(انفجار الزائدة تالدوديه ،بول البريتون ،الحاجه الى المضادات الحيويه و مرض السكري ، مرض العوز المناعي لآي (سبب]. كانت الاعمار تتراوح بين 4-60 سنه بمعدل 32 سنه0 قسم العدد العام الى مجموعتين الاولى (1) تشمل 110 مـــريض ادجريت لهم عملية استئصال الزائده الدوديه مع (دفن) اصل الزائده والمجموعه الثانيه (2) تشمل 120 مريض اجريت لهم نفس العمليه بدون دفن اصل الزائده . كلا المجموعتين متناظرتين من ناحية العمر والجنس وجرح العمليه ودرجة التهاب الزائده الدوديه ولم تستعمل المضادات الحيويه اوبزل البريتون في كلا الحالتين.

لم نلاحظ أي فرق كبير بين نتائج المجموعتين في ما يخص حدوث المضاعفات وخاصة التهاب جرح العمليه او زيادة عدد ايام الرقود في المستشفى.

تم استنتاج ان مرحلة (دفن] اصل الزائده بعد استئصاله ليس ضروريا ويمكن الاستغناء عن هذه المرحله لعدم تـــأثيره فـــي النتائج وهذا يفيدنا في تقليل وقت العمليه وكذلك استعماله خاصة في حالة تورم المعي الاعور مما يجعل عملية (الدفن] صعبا او مستحيلا وكذلك نستفاد من التقليل من استعمال خيوط العمليات من نوع (الكات كت) لكننا لاننسى بأن الاختيار الشخصي حق يمكن الاستمرار باستعماله.

Introduction

Appendecectomy is the commonest surgical emergency done in our locality, this fits with others . Asexpected the complication will be common too,we notice that sometimes certain operative details are not necessary. By this study we are trying to confiem that invagination of the ligated appendix stump is not necessary.

The usaual and yhe traditional way of dealing with appendix stump is to crush it , ligated and then invaginated [1] and som time carbolization of the stump prior to invagination added to safeguard against infection. Since then attempt to sterilyse the appendix stump does not influence the incidence of post operative wound infection [2,3] but still the necessity to invaginate the ligated stump are not fully undecided.

Kingsley [4] in a retrospective study claimed that invagination of the stump had no influence on the post operative wound infection rate , but sinha[5] in another retrospective comparison study comparison study found a significant reduction of the incidence of wound infection after ligation only. It is difficult to explain these conflicting results and in our prospective study we might have answer for thios point.

Methods

The selection of patients in this prospective study depends on certain points .

1- Right gridiron, muscle splitting incision done only.
2- Operative time less than one hour.
3- Noantibiotic used.
4- Nodrain used.
5- No clinical and operative evidence of appendix perforation seen.
6- Threads used are only catgut internally and breade silk to the skin.
7- Patients with immunosuppression or diabetes are ineluded from this study .

946 patients undergone appendicetomy in Hilla surgical teaching hospital from ist of janary 2000 to ist of may 2001 . only 230 patients were randomly allocated for (group i) equal to 110 patients for ligation and invagination and (group 11)equal to 120 patients for ligation only .716 patients taken out of this study because they needed antibiotics or they needed drains or they are diabetic or on immunosuppression or needed muscle cutting incisions leaving230 to complete this study .these appendicectomies done by our surgical teams using the same principles and the same theater suit.(table1)

Table 1 showing the age of the patients and the groups

Age	Group1(110 pt) Ligation +invagination		Group11(120pt) Ligation only	
	male	female	male	female
0-10 10-20 20-30 30-40 40-50 50-60	46 19 13 7 4 2	6 14 26 9 3 1	13 17 13 8 3 2	8 16 28 9 3 0
	49	61	56	64
total	110		120	

Simple dressing used to the wounds for 24 hours then left open. The wounds inspected daily during the hospital stay and weekly for 3 after discharge.

Wound infection defined as a wound with discharge of material with redness of the edges)[6] . All the patients divided according to the degrewe of inflammation (table2).

Table 2 showing the severity and degree of inflammation and number of patients involved.

	Group1	**Grou11**
Normal **Acutely inflammated** **gangrenous**	**30** **77** **3**	**28** **87** **5**
total	**110**	**120**

Hospital stay is recorded too

Results

During the period of study the wound in infection rate found in 46 patients which is to (20%) .Wedid not notice a significant differences in wound infection rate between the two groups .(table3)

Table3 shows the infection rate in both groups

	Group1	**Group11**
Normal **Acute** **Gangrene**	**2** **18** **1**	**3** **20** **2**
total	**21**	**25**
%	**19.1%**	**22.7%**

Hospital stay also seen almost equal in both groups. Only in the ligation only group (group11) two patients developed adhesive post operative intestinal obstruction , one needed exploration which found to be due to fibrous to the area of the appendix. No pelvic or subhepatic collection seen in either groups.(table 4).

Table 4 shows hospital stays, total and mean in days

	Group1 **Ligation +invagination**	**Group11** **Ligation only**
No.of patients	**110**	**120**
Total hospital stay	**3-8**	**3-7**
mean	**5.5**	**5**

Hospital stay also recordedand shows no significant differences in both groubs. (table 4).

Discussion

Wound infection rate (20%) almost similar to other studies in which no prophylactic antibiotics used [7,8,9] though we think that the use of antibiotics specially metronidazole will reduce infection rate more .because rate like this is too high [10-12].

The conclusion that the method of closure of appendix stump dose not affect the wound infection rate though we have only one case of adhesive intestinal obstruction in non invaginated group,others like sinha,s series showed that adhesive obstruction found in cases with invaginated stun this suggests that this ccomplication might happen in any way of treatma the appendix stump invagination or ligation only.

Soat the end we stress the point that ligation of the appendix stump only or with invagination have no affect on the chance of infection or it might increase hospital stay and that the present paractic of personal preferences should be allowed to continue.

Conclusion

From this prospective study we concluded that certain certain operative steps are not necessary and can be omitted to reduce operative time and we can reduce the need for extra use of catgut which is important to us in theses days, though we stress that that personal preferences should be allowed to continue.

Refrences

1- Miles Aand DPD. Operative surghery.Oxford university press: 1933, 488.
2- Getzen LC. Surgery 1968:64:514.
3- Rosenberg IL. , JR coll surg edinb 1974,19,381.
4- Kingsley DPE ,Brjsurg,1969,56,491.
5- SINHA ap Appendicectomy anassessment on the advisability of stump invagination br j surg ,1977,499.
6- Leigh D Apease R, Henderson H,Simmions K,Russ R. Br J Surg ,1967,63,973.
7- Wills Atferguson I.R Jones P.H. et al , Br Med J ,1976,1,318.
8- Barnes BE behringer GE wheelok FC wilkins EW. Ann surg ,1962,156,703.
9- Gilmore OJA Martin Br J Surg 1974,61,281.
10- Rodgers J Ross D Me Naught W Gillespie G Br J Surg ,1979,66,425.
11- Greenhall MJ Bakran A Piekford IR et al a double trial of single intravenous dose of metronidazole as prophylaxis against wound infection .
12- Salem Rj, Johanson J,Devitt P, Br J, Surg ,1979,66,430.
13- Abernethy B.C. Stump Amlrels 66/1984 the app should be invaginted ?.
14- Magarey CJ, Lancet ,1971,2,179.
15- Pinto DJ, Sanderson OJ Br Med J 1980,1,275.