Date presented: October, 2017 Acceptance date: December, 2017 Release date: February, 2018

08

COLON CANCER, ADENOMA CARCINOMA SEQUENCE AND POLYP SERRATED POLYP

MSc. Juan Carlos Calderón Reza[1]
E-mail: dr.juan.carlos.calderon@outlook.com
MSc. José Wilson Bravo Pin[1]
E-mail: Joseph_ksh_116@hotmail.com
[1] Holy Spirit University. Guayaquil. Republic of Ecuador.

Suggested quotation (APA, sixth edition)

Calderón Reza, J. C., & Bravo Pin, J. W. (2018). Colon cancer, adenoma carcinoma sequence and serrated polyp. *Conrado Magazine* , 14(62), 52-55. Retrieved from http://conrado.ucf.edu.cu/index.php/conrado

SUMMARY

Adenomatous polyps are very common and have great potential for malignancy. Of these, the virus is the one with the greatest malignant potential, but all histological types have a hairy component in greater or lesser proportion, so that they can all be considered premalignant, this degenerative process known as adenoma carcinoma85% of colorectal cancers. Today, thanks to technological advances, it is known that not all colorectal cancers present the aforementioned sequence, the remaining 10 to 15%, are included in the so-called "Serrated neoplasia pathway" whose characteristic is the instability of micro satellites, characterized by the inactivation of DNA repair genes by epigenetic changes such as hypermethylation of the promoter of the MLH1 gene observed in Lynch syndrome.

Key words:

Polyps, adenomas, serrated polyp, malignancy, surveillance.

ABSTRACT

Adenomatous polyps are very common and pose great potential for malignant transformation. Between them the velloso is the of greater potential malignant, but all them types histological presented component villous in greater or lesser proportion, by what all is can consider premalignant, this process degenerative known as sequence adenoma carcinoma explained effectively a 85% of them cancers colorectal by decades. Today thanks to technological advances, is known that not all colorectal cancers are the above sequence, the remaining 10-15%, are included within the so-called “Serrated neoplasia pathway whose characteristic is microsatellite instability, characterized by the inactivation of the DNA repair genes by epigenetic changes as the promoter hypermethylation of the MLH1 gene observed in the syndrome of Lynch.

Keywords:

Polyps, Adenomas, serrated polyp, malignancy, surveillance

INTRODUCTION

Polyps are one of the most frequent lesions of the colon, it is the projection or elevation of abnormal epithelium towards the colonic light, originates in the mucosa. Its number is very variable from one patient to another, when it presents a high number it is called Colóposis-ca, while in reduced numbers it is called sporadic polyp (Pagliere, 2014).

Because of their malignant potential they are classified in non-neoplastic or benign polyps: Hyperplasic, inflammatory and ha-martomatous polyps and Neoplastic polyps, within this group there are adenomatous polyps (Bacchiddu, Álvarez-Urturri & Bessa Caserras, 2012).

Adenomas are the most common form of polyp and present great malignant potential, representing 50 to 67% of them, they are considered low-grade dysplastic lesions. WHO has classified them by their histological appearance:

Tubular 87%
Hairy 5%
Tubulovelloso 8%

The tubular adenoma, which is the most frequent among those mentioned, contains 20% of the hairy component, while the hairy adenoma, which represented only 5% of all adenomas, contains 50 to 75% of the hairy component, which justifies not only its denom-ination, but it is also an expression of its malignification potential (Ferrari, Masúo Maruta & Averbach, 2013).

For the above mentioned, a cancer can occur in any adenoma since each histological type has a hairy component in greater or lesser proportion (Andreu García & Fernández Arenas, 2011).

Systematic review of texts on general surgery, colorectal proctology and applied imaging.

DEVELOPMENT

The World Health Organization has classified them by their histological aspect:

Tubular, hairy and tubulovelous.

By their macroscopic aspect we can classify them as: Pedunculated and sessile

By your number: single or multiple.

For the degree of dysplasia:

Low
Moderate or intermediate
High

For macroscopy and clinical impact:

Normal: asymptomatic, detected only by screening.

Long: Hematochezia, anemia, positivity of blood hidden in feces.

Very long: Diarrhea, electrolyte alterations, intussusception, may prolapse (Beck, 2011). According to their anatomical distribution:

Blind 8%
Right colon 9%
Flexura hepática 5%
Transverse 10%
Splenic flexure 4%
Left colon 14%
Sigma 43%
Straight 8% (Beck, 2011)

Adenoma- carcinoma sequence:

This sequence explains how an adenomatous polyp will present a malignant course after following its natural evolution.

The evidence for this process is described below.

The size of the adenoma is related to the incidence of colorectal cancer, in other words there is a direct relationship.

Presence of benign adenomatous tissue in cancer biopsies.

Prospective studies of unresected polyps, with progression to colorectal cancer after follow-up.

Patients with polyps have a higher risk of colon cancer.

Patients with colon cancer often have polyps in other areas of the colon.

Treatment of a polyp detected by screening reduces the incidence of colorectal cancer.

Maximum incidence of adenomatous polyps at age 50, maximum incidence of colon cancer at age 60 (Beck, 2011; Courtney, Townsend, Beauchamp & Evers, 2013; Bacchiddu, et al., 2012).

The study of the adenoma-carcinoma sequence comprises the following genetic bases to explain 80 - 85% of colorectal cancers and was studied in individuals with (FAP) familial polyposis adenomatosis.

It begins with an alteration in the colon epithelium, in which the Adenomatous polyposis coli (APC) that regulates cell growth and apoptosis is inactivated, a sequence of alterations in the K-ras, causing aExophytic formation of cells with APC alteration and evolution to intermediate-grade dysplasia.

Then dysplasia becomes advanced to the alteration of the DCC gene (deleted in colon cancer gene) which is responsible for molecular adhesion and facilitates apoptosis and corresponding tumor suppression, followed by mutation of the p53 gene, which regulates DNA repair.

As previously mentioned, not all colorectal cancers present this sequence, 10 to 15% of them are included in the so-called "Serrated neoplasia pathway" whose characteristic is the instability of microsatellites characterized by inactivation of DNA repair genes by alterations such as the hi-permeation of the promoter of the MLH1 gene observed in Lynch syndrome, HNPCC (hereditary nonlipophasic colorectal cancer).

Diagnóstico:

Colonoscopy is the gold standard for the diagnosis of polyps, useful for localization, description of number and size, in addition to allowing biopsy and even exsus-resis, being able to decide a complete removal, can employ electrocautery to ensure proper hemostasis.

A resection of the anatomical segment may also be required when it is impossible to raise the polyp using infiltration, also when the polyps are ulcerated or friable.

Thus, the criteria of poor prognosis such as partial resection of a polyp, poorly differentiated carcinoma, lymphovascular involvement or lesions less than 2 mm from the resected margin will also be subject to surgical intervention.

Dietary hygiene indications:

Avoid sedentary lifestyle, a diet rich in vegetables and dairy products by improving BMI.

Moderate intake of red meat, processed, a reduction in alcohol consumption, tobacco.

Use of folates, acetyl salicylic acid, COX2 inhibitors (by weighing cardiovascular risks), decrease the risk of colorectal cancer by preventing the formation of polyps.

Screening methods:

Because of its neoplastic potential, different screening methods such as colonoscopy, computed tomography are used in order to achieve early detection and repair of polyps, thus avoiding colorectal cancer.

The most used screening is colonoscopy, since it allows rapid identification and sampling for histological studies, evidence indicates a reduction of more than 90% in the incidence of colorectal cancer in patients who underwent initial polypectomy.

Technical difficulties in screening:

Having to overcome difficulties in performing the mentioned procedure, such as polyps less than or equal to 1 centimeter, polyps of 6 to 9 millimeters and less than 5 millimeters with a failure rate in detection by colonoscopy of 5, 10 and 30% respectively.

Low-risk group: 1% cancer incidence.

Presence of 1 polyp, patients under 60 years.

High-risk group: 10 to 20% cancer incidence.

Presence of 3 or more polyps, patients older than 60 years and family history of colorectal cancer.

A negative screening represents less than 1% of cancer incidence (Bacchiddu, et al., 2012; Van Schaeybroeck, et al., 2014)

Risk of malignancy and degree of dysplasia:

Although the risk of polyp malignancy increases with patient age, degree of dysplasia and polyp ta-ma, studies support the risk of distant spread of tumor cells according to the Haggitt classification

Haggitt 1, 2, 3 have a risk of metastasis < 1%.

Haggitt 4 has a 12 to 25% risk of metastasis regardless of whether it is sessile or pedunculate

Classification of kudo.

Indicates the degree of submucosal invasion.
SM1: Invasion of the upper third of the submucosa.

SM2: Invasion of the middle third of the submucosa.

SM3: Invasion of the lower third of the submucosa.

Haggitt 1, 2 and 3 are considered equivalent to SM1 of Kudo, while a Haggitt 4 can be interpreted as an SM1, SM2 or SM3.

SM3 presents a high probability of metastasis in relation to SM1, Kudo SM2.

A positive margin for tumor cells, indicates an in-decuated management for a malignant polyp, and is widely related great morbidity and mortality.

The safety margin of at least 2 mm from the deepest point of invasion to be considered as an acceptable cancer resection margin.

Those cases where the margin was < 2 mm, presence of lymphovascular invasion, even in SM3 sessile polyps, are considered to be below the parameters of an oncologically acceptable resection (Andreu García, et al., 2011; Sciallero, Bonelli & Aste, 1999).

Because of the risk of recurrence of this lesion, it is recommended to follow-up the polypectomy site in 2 to 3 months of presenting indications of malignancy (Ferrari, et al., 2013; Potack, 2016).

CONCLUSIONS

Screening may be difficult as in the case of polyps less than 1 cm, polyps 6 to 9 mm and those less than 5 mm with a failure rate of detection by colonoscopy of 5%, 10% and 30%, respectively, which would remain in their natural evolution and inevitably lead to colorectal cancer.

In addition, the age groups have been correlated with currently low-risk groups with 1% incidence of cancer (presence of 1 polyp in subjects under 60 years of age) and high-risk groups with 10% to 20% incidence of cancer (Presence of 3 or more polyps in subjects over 60 years old and family history of colorectal cancer). Even with a negative screening, 1% incidence of cancer has been reported in subjects with long-term follow-up.

At the time of detection and resection of a polyp, a safety distance of at least 2 is required
mm of the deepest point of invasion to be considered a negative resection margin, including cases of sessile polyps, a margin different from that described is considered below the parameters of an oncologically acceptable resection.

Due to the technical difficulties that may be present in screening, difficulty in respecting the safety margin when taking a biopsy sample, the subclinical of the pathology and the polyp-cancer sequence (whether from the point of the adenoma or the clipped polyp), we consider that the term benign should be omitted from the classification of polyps.

BIBLIOGRAPHICAL REFERENCES

Andreu García, M., & Fernández Arenas, A. (2011). Colorectal polyps and intestinal polyposis. European Association of Gastroenterology, 345-357.

Bacchiddu, S., Álvarez-Urturri, A. C., & Bessa Caserras, X. (2012). Colorectal polyps. Continuing Medical Training in Primary Care, 19(8), 472-480. Re-cuperation of http://www.fmc.es/es/polipos-colorrecta-les/article/X1134207212550865/

Beck, D. (2011). The ASCRS Textbook of Colon and Rec-tal Surgery. New York: Springer.

Courtney, M., Townsend, R., Beauchamp, D., & Evers, M. (2013). Sabiston Treatise on Surgery, biological foundations of modern surgical practice. Barcelona: Elsevier.

Ferrari, A. P., Masúo Maruta, L., & Averbach, M. (2013). Therapeutic Digestive Endoscopy. Rio de Janeiro: Amolca.

Pagliere, D. N. (2014). Difficult Colonic Polyps. Re-cuperado de http://www.osecac.org.ar/documentos/guias_medicas/GPC%202008/Gastroenterologia/Gas-tro-10%20Polipos%20Colonicos%20Dificiles_v0-14.pdf

Potack, J. (2016). Colonic polyps and polyposis syndro-mes. Philadelphia: Elsevier Saunders.

Sciallero, S., et al. (1999). Do patients with rectosigmoid adenomas 5 mm or less in diameter need total colo-noscopy?Gastrointestinal Endosc, 50(3), 314-321. Retrieved from https://moh-it.pure.elsevier.com/en/publications/do-patients-with-rectosigmoid-adenomas-5-mm-or-less-in-diameter-n

Van Schaeybroeck, S., et al. (2014). Colorectal cancer. Philadelphia: Elsevier.Schuhmann, R. J. (2010). Engi-neering Leadership Education: The Search for Defini-tion and a Curricular Approach. *Journal of STEM Edu-cation: Innovations & Research, 11 (3), 61-69.* Retrieved from https://www.asee.org/public/conferences/56/pa-pers/13725/download

Sheppard, S. D., Pellegrino, J. W., & Olds, B. M. (2008). On Becoming a 21st Century Engineer. *Journal of En-gineering Education, 97(3), 231-232.* Retrieved from *https://vtechworks.lib.vt.edu/bitstream/handle/10919/47789/2010CTTEYearbook.pdf;sequence=1*

Vest, C. M. (2008). Context and Challenge for Twenty-First century Engineering Education. *Journal of Enginee-ring Education, 97 (3), 235-236.* Retrieved from *http://onlinelibrary.wiley.com/doi/10.1002/j.2168-9830.2008. tb00973.x/abstract*

Walumbwa, F. O., Avolio, B. J., Gardner, W. L., Wernsing, T. S., & Peterson, S. J. (2008). Authentic leadership: Development and validation of a theory-based mea-sure. *Journal of Management, 34(1), 89-126.* Retrieved from https://pdfs.semanticscholar.org/d65c/aca5313e-2b7febd6e40feaeb88d65a2c3472.pdf

Date presented: October, 2017 Acceptance date: December, 2017 Release date: February, 2018

09

PROPOSAL FOR AN INFORMATION TECHNOLOGY AND COMMUNICATIONS PROJECT CONTINUING TRAINING IN HIGHER EDUCATION TECHNOLOGY OF MANABÍ

PROPOSAL FOR PROJECT OF TECHNOLOGIES INFORMATION AND COMMUNICATIONS FOR CONTINUING TRAINING IN THE TECHNOLOGICAL SUPERIOR INSTITUTES OF MANABÍ

MSc. Cristhian Gustavo Minaya Vera[1]
E-mail: cristhian.minaya@uleam.edu.ec
Dr. C. Holger José Muñoz Ponce[1]
E-mail: holger.munoz@uleam.edu.ec
MSc. Bella Aurora Barreiro Vera[1]
E-mail aurora.barreiro@uleam.edu.ec
[1] Universidad Laica Eloy Alfaro. Manabí. Republic of Ecuador.

Suggested quotation (APA, sixth edition)

Minaya Vera, C. G., Muñoz Ponce, H. J., & Barreiro Vera, B. A. (2018). Proposal for a project on Information and Communication Technologies for continuing training in the technological institutes of Manabí. *Conrado Magazine* , 14(62), 56-59. Retrieved from http://conrado.ucf.edu.cu/index.php/conrado

SUMMARY

The purpose of this research is to use information and communication technologies for continuing training, looking for what types of training would be optimal for its implementation, although this is a verywork in the 21st century, a theoretical basis was sought to support and solve the problems encountered. Several technical methods and scientific procedures will be used to achieve the objectives from a bi-graphic review to the use of experimental methods to get to use or develop the platformAn optimal IT tool for meeting technical requirements, hoping to obtain results that can be used to generate high-impact documents.

Key words:

Information and Communications Technologies, continuing training, Technological Institutes.

ABSTRACT

The purpose of this research in itself is to use the informa-tion and communication technologies to apply continuous training, seeking that types of tools would be optimal for their execution, although this is a very booming issue justifies it with the fact that there is no similar work du-ring the 21st century, we will seek theoretical foundation to support and solve the problems encountered. Several technical methods and scientific procedures will be used to achieve the fulfilment of the objectives from a bibliogra-phical review to the use of experimental approaches in order to use or develop the platform or computer system Optimal for the fulfillment of technical requirements, ho-ping to obtain results that can serve us to generate high impact documents.

Keywords:

Information and Communication Technologies, continuous training, technological institutes.

INTRODUCTION

The development of new information and communication technologies is one of the key factors in understanding and explaining the economic, social, political and cultural changes of the last two decades (Liguori, 2000). As a result, these technologies remain the necessary tools for building and improving societies in the 21st century. In addition, the need to have socio-cognitive and technological strategies to optimize this technological mediation and strengthen equitable educational possibilities of knowledge management is evident from the Information and Communications Technologies (Meza Intriago, Barreiro Vera & Minaya Vera, 2017).

In recent decades, we have been able to observe a qualitative and quantitative increase of Information and Communication Technologies in our society, which is leading to a transformation of this (Hinojo Lucena, Fernández Martín, & Aznar Díaz, 2002). Working in "real" environments through simulation technology tools enables decisions to be taken on situations at the very moment they occur (Gisbert Cervera, Cela-Ranill & Isus Barado, 2010).

On the basis of what has been said about the use of Information and Communications Technologies, it can be considered that their use is generating major impacts worldwide in all actors and sectors of governments, building knowledge-based societiestion and productivity with science. The present research project will have specific uses of new and innovative Information and Communications Technologies in particular for the development of the information system which will act as a medium for continuing training.

The impact or object of ICT integration in this research project is continuing training, which has undergone enormous developmentthanks to the emergence of specific public policies have promoted its extension throughout the business fabric (Sarramona i López & Pineda, 2006).

In works by Fernández Morante & Mella Núñez (2016), they mention that continuing training as the strategic approach allows the development of desired skills using tics as a resource to ensure flexibleease of access to training activities. For Tejada & Ferrández (2012), it can be said that continuing training is in the of the professional skills that contribute to the most effective execution of the profession. Continuing training has been shown to increase the potential of the organization through the further development and updating of professionals and personnel.

The present research work makes it possible to propose techniques, methods and procedures for the use of Information and Communication Technologies in continuing training at technological institutesof Manabí, which is desirable since in our environment there is no other type of research related to the same subject that can be considered as a prototype project for application on a large scale.

The proposal of the research project would be of serious social importance since it would aim to improve the technological training of the Higher Technological Institutes of Manabi by means of continuing training with the use of information and communication technologies, which would directly benefit the teachers and indirectly the students of the institutes mentioned above.

Through the use of Information and Communication Technologies, new tools can be created to strengthen professional development with the creation and implementation of continuing training programmes and in their effect helps and proposes the use of practical environments.

The aim of the research is to create a number of ICT-related projects for continuing training, and the results are intended to create regional production and generate knowledge in order to suggest ideas; recommendations to comply with hypotheses and leave open for further studies.

With the methodology used, it would be possible to create several specific definitions related to the study variables and with the use of the chi-square to determine and compare the relationship between them. The results obtained would be considered to relate it to other variables such as the institutional best continuous and thus determine which other type of population can be included.

DEVELOPMENT

The adoption of information and communication technologies, and electronic commerce in particular, benefits businesses to the extent that it reduces transaction costs and increases the speed and efficiency of organizational processes and operations (Jones, Motta, & Alderete, 2016). In

studies by Jones, Motta & Alderete (2016), it can be seen that there is interest in the scientific community on how to carry out the adoption of organizational practices and the implementation of technologies in organizations.

The use of information technologies is imminent in order to be able to meet all stages of the research project, including the creation of the information system which will manage continuing training, which according to Hernández Trasobares (2003), we can propose the following objectives:

- Support the objectives of institutions.
- Provide information for the control of all institutions.
- Adapt information needs to the evolution of institutions.
- Interact with the different actors in the organization of the institutions.

To be clear in information systems, an information system consists of three components: human systems, tasks and application (González, 2017). An information system as you say is used to generate information; in the case of this information project and with the theoretical study to be carried out, it will be determined which type and platform of information system will be suitable for continuing training.

The continuing training process, as expressed by Lidón Moliner (2010), should be based on collaborative work, investigation and experimentation, critical reflection on the school's own culture and practice, and directed towards communities rather thantion in the European Union. If the continuing training programmes are geared towards further vocational training, in the case of the research project the pedagogical process can be oriented.

The aim of this proposal is to develop certain criteria which will enable us to establish techniques, methods and procedures for the use of ICT in continuing training at the Higher Technological Institutes of Manabi; which consist of the following:

Social

To improve the academic quality of the Higher Technological Institutes of Manabí through Continuing Training with the use of information and communication technologies.

Economic

By exporting improved human talent, the Higher Technological Institutes of Manabí will contribute to the improvement of the productive matrix of Ecuador.

Technological

New information and communications technologies will be applied in the development of information systems.

Academics

The continued use of Information and Communication Technologies for the development of continuing training in other CEAACES-recognized Institutes of Education will be promoted.

The quantitative criteria are intended to yield the following quantity of products:

- 3 Third level degree work in the course of Systems Engineering.
- 4 Presentation of project results at a scientific event (congress, workshop, conference).
- 4 Publication of regional articles.
- a high-impact scientific publication.

CONCLUSIONS

Information and Communications Technologies are of high priority during the 21st century, for this reason its use is eminent and it is used for many situations and continuing training is a compatible element to apply its characteristics.

Continuing training is a process which few institutions employ in the medium and long term, and only focus on small talks which contribute little or nothing to the continuous improvement they represent.

The proposal of the Information and Communications Technologies project for continuing training at the Higher Technological Institutes in Manabí is a plan which can be implemented since it is economically feasible.

The proposal of this project refers to a prior analysis, in order to detect shortcomings and thus create continuing training programmes so as to apply them through the use of information and communication technologies.

The proposal of this research project which can be considered as a prototype to then apply it on a larger scale for a wider population