RESEARCH ARTICLE

Utility of Video Consultation in Digestive Diseases

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Abstract

Introduction: Despite the rise of video consultation, most consultations in patients with digestive diseases tend to be face-to-face.

Objective and Methods: In 2016, gastroenterology video consultation was implemented in the hospital. A prospective and descriptive study of a series of patients attended consecutively by video consultation by a gastroenterology specialist for 50 months. We have analyzed which syndromes and digestive diseases are susceptible to being performed by video consultation.

Results: Two hundred fifty patients were selected (100 during the first three months of the COVID-19 pandemic), 50.4% men and 49.6% women, with a mean age of 48 (SD 18-9) years. The main reason for the consultation of the 142 patients (56.8%) with definitive diagnoses was: dyspepsia, hepatobiliary disease, diarrhea, gastroesophageal reflux, and irritable bowel syndrome. The final diagnosis was dyspepsia (21%), hepatobiliary disease (16%), diarrhea (9%), irritable bowel syndrome (8.4%), intolerances (including gluten intolerance and sensitivity) (8.4%), gastroesophageal reflux disease (7,7%), and inflammatory bowel disease (6.3%). The concordance between the diagnostic impression and the definitive diagnosis was 60%.

Conclusions: Video consultation in gastroenterology is an effective alternative to the face-to-face visit, used equally in patients of both sexes, where dyspepsia is the main reason for consultation and diagnosis. During the first 3 months of the COVID-19 pandemic, the number of video consultations increased 10 times. The main pathologies diagnosed were dyspepsia and hepatobiliary diseases.

Keywords: Video consultation, Telemedicine, Teleconsultation, Gastroenterology.

Introduction

The emergence of technology in healthcare is an increasingly evident reality, driven by the rise of digital transformation. From this convergence between health and digital technology, the so-called digital health is born, which provides patient-centered care, promoting accessibility and efficiency, through disruptive technologies such as telemedicine and mobile health. Mobile applications create the digital channel, where healthcare can be delivered anywhere. Video consultation (VC) is a clear example of this, being very useful for disease control and follow-up after hospital discharge [1]. There is sufficient evidence that telemedicine reduces healthcare costs, improves the health of the population and improves the client's experience in caring for their health [2].

At times like this pandemic, the most adverse scenarios often provide an opportunity to develop and test the ability of these digital health technologies to increase the efficiency of healthcare systems. Thanks to the implementation of digital strategies such as VC, a strong change has been observed from face-to-face visits to virtual consultations. Even after the COVID-19 outbreak was over, an increase in the adoption of digital health solutions has continued to be observed. Many adoption barriers have disappeared, as the general population and professionals demand more and more technologies.

This implies the creation of a new communication channel that guarantees access, a change in the care delivery model with a reduction in personal visits and training of clinical staff with adaptation to new technologies. It also involves the design of new financing models such as the recognition of virtual visits as a billable service.

In 2016, gastroenterology VC was implemented in our hospital through a synchronous telemedicine platform. Despite the rise of telemedicine, the majority of consultations for patients with digestive diseases tend to be face-to-face. We have analyzed which digestive syndromes and diseases are susceptible to be done by VC.

Methods

This is a prospective and descriptive study of a series of patients attended consecutively by VC by a gastroenterology and hepatology specialist. Tha data was collected through review of the electronic health record, for 50 months (from April 2016 to May 2020), 100 of them in the last three months, from March to May 2020, during the COVID-19 pandemic. The inclusion criteria was to have the gastroenterology pathologies susceptible to be done by VC, previously established (Table 1). All other gastroenterology pathologies and non VC visits were excluded.

Table 1. Protocol for gastroenterology pathologies susceptible to be done by VC.

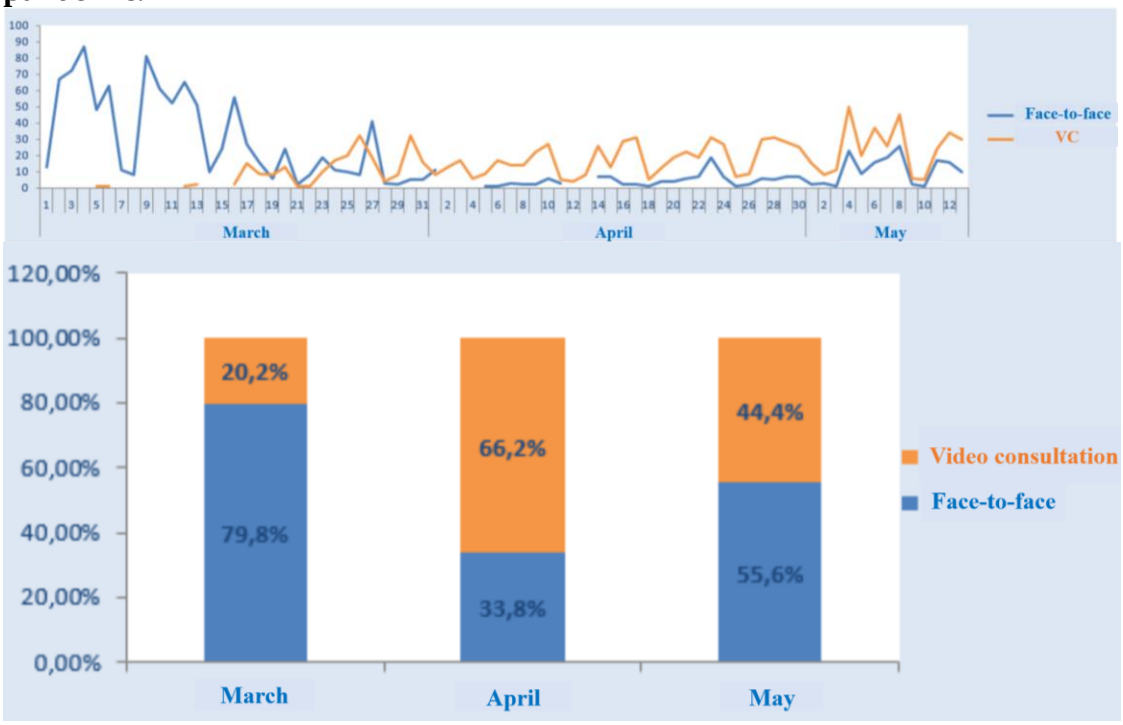
Gastroesophageal reflux disease
Dyspepsia
H. Pylori
Gastritis
Intolerances (including gluten)
Irritable bowel syndrome
Chronic constipation
Acute or chronic diarrhea
Second visits of monographic units
Inflammatory bowel disease
Chronic liver disease

The study was conducted in accordance with the principles of the Declaration of Helsinki and Good Clinical Practices.
The analysis of the database was carried out using a statistical package SPSS 11.5 for Windows. The mean, standard deviation and percentages were calculated using specific formulas.

Results

Two hundred fifty patients were selected, 50.4% men and 49.6% women, with a mean age of 48 (SD 18-90) years. Because problems in the VC connection, 43 (17%) patients were excluded. The VC of 142 (56.8%) patients with definitive diagnoses subsequently verified in the electronic medical record were analyzed. Of these, 72 (50.7%) were carried out between April 2016 and February 2020 and 70 (49.3%) between March 2020 and May 2020, with the COVID-19 pandemic (Figure 1).

Figure 1. Evolution of face-to-face appointments versus VC during the COVID-19 pandemic.



The main reason for the consultation in these 142 patients was in order of highest to lowest frequency: Dyspepsia (including H. Pylori dyspepsia), hepatobiliary disease, diarrhea, gastroesophageal reflux disease (GERD) and irritable bowel síndrome (IBS).

The definitive diagnosis was dyspepsia in 30 (21%) patients, hepatobiliary disease in 23 (16%), diarrhea in 13 (9%), IBS in 12 (8.4%), intolerances (including intolerance and gluten sensitivity) in 12 (8.4%), GERD in 11 (7.7%), control of polyps and colorectal cancer in 11 (7.7%), inflammatory bowel disease (IBD) in 10 (6.3%), and other diseases in 22 (15.5%) (Table 2).

Table 2. Digestive diseases diagnosed by VC in our series compared with Huntzinger study.

	A (n: 72)	B (n: 70)	C (n:142)	Huntzinger (n: 124)
GERD	5,5%	8,6%	7,7%	17,7%
Dyspepsia	9,7%	10%	9,8%	8,1%
HP	11%	11,4%	11,2%	-
Hepatobiliary	20%	12%	16,2%	13,2%
Diarrhea	11%	7%	9,1%	16,9%
IBS	9,7%	7%	8,4%	3,2%
Intolerances	9,7%	7%	8,4%	-
To Gluten			3,5%	2,4%
P-CRC	6,9%	8,5%	7,7%	0,8%
IBD	1,4%	11,4%	6,3%	4,0%
Diverticula	2,7%	7,0%	4,9%	-
Fissure	2,7%	2,8%	2,8%	2,4%
FI			1,4%	1,6%
CP	1,3%	2,8%	2,1%	0,8%
Other	4,1%	4,1%	4,2%	-

Series: A: VC between April 2016 and February 2020; B: VC between March 2020 and May 2020; C: total VC with definitive diagnoses; Huntzinger (from reference 19).
GERD: Gastroesophageal reflux disease; HP: H. Pylori; IBS: irritable bowel syndrome; P-CRC: polyps and colorectal cancer; IBD: inflammatory bowel disease; FI: fecal incontinence; CP: chronic pancreatitis.

In the subgroup of patients treated during the COVID-19 pandemic, 52% were male and 48% female, with a mean age of 49 (SD 19-90) years. The definitive diagnosis was dyspepsia in 15 (21.4%) patients, hepatobiliary disease in 8 (11.4%), diarrhea in 5 (7%), IBS in 5 (7%), intolerances in 5 (7%), GERD in 6 (8.6%), control of polyps and colorectal cancer in 6 (8.6%), and IBD in 8 (11.4%) (Table 2). None of the patients with diarrhea had COVID-19 infection and during this period only one patient with COVID-19 consulted for dysphagia.
The concordance between the diagnostic impression and the definitive diagnosis was 60%. The degree of satisfaction reached 65% measured with Net Promoting Score.
Between April 2016 and February 2020, 150 VC were performed (3 per month) while between March 2020 and May 2020, during the COVID-19 pandemic, 100 VC were performed (33 per month), ten times more.
The prescribed diagnostic tests are listed in Table 3.

Table 3. Diagnostic tests requested during the VC in our series compared with Huntzinger study.

	Our Series	Huntzinger
Blood test	20,8%	14,6%
Breath tests	13,2%	-
Endoscopy	16,8%	16,7%
X-rays and Ultrasound	8,8%	12,5%
Fibroscan	0,8%	0.7%

The origin of VC was from highest to lowest frequency from Catalonia, Madrid, the rest of Spain, the European Union and the Sahara.

There were no significant differences in the 108 (43.2%) patients without a definitive diagnosis, due to loss to follow-up. 50% were men and 50% women, with a mean age of 46 years. The reason for consultation from highest to lowest frequency was dyspepsia, hepatobiliary disease, diarrhea, GERD and intolerances.

Discussion

The present study shows that VC in gastroenterology is an effective alternative to face-to-face visits, where dyspepsia is the main reason for consultation and diagnosis.

The consultation in the gastroenterology and hepatology is fundamentally face-to-face, where inspection, palpation, and even auscultation, in addition to the clinical history, are very important for the diagnostic impression. The possibility of performing abdominal and technological examinations in the same medical act, such as ultrasound, fibroscan, breath test or anuscopy, complement and reaffirm the clinical suspicion and allow a high-resolution consultation [3].

Telemedicine [4,5] in its different modalities, telephone consultation [6], online consultation and VC, has been used successfully in other specialties such as cardiology, for the control of chronic diseases such as heart failure or arterial hypertension, or in endocrinology for the follow-up of patients with diabetes.

Previous studies in gastroenterology have shown a high level of satisfaction with the use of telemedicine in patients with IBD [7], with a significant decrease in face-to-face visits [8,9] and its usefulness in the follow-up of these patients, with greater adherence to treatment and without significant changes in relapses or hospitalizations [8]. Even Cross et al [10] in a randomized and controlled study demonstrated how with the use of telemedicine, IBD activity decreased, hospitalizations and quality of life significantly increased. Other studies showed that it was more cost-effective than standard and short-term telephone care [11].

In hepatology, telemedicine carried out effectively reduces costs and improves patient outcomes in the diagnosis and control of cirrhosis and hepatitis C virus infection, especially in rural áreas [12]. A study carried out in Argentina with 200 consultations in a liver unit, 145 (72.5%) were resolved with telemedicine, primarily NASH, viral hepatitis and benign liver lesions [13].

A recent editorial by the Lancet [14] establishes that telemedicine is used by 25% of cardiologists, 15% of endocrinologists, and only 7.9% of gastroenterology specialists, despite the fact that telemedicine in digestive

diseases has high potential, especially in specialized consultations (monographic units), were it reduces waiting lists and costs, and facilitates second opinions or intercommunication between experts (teleconsultation) or with primary care [15]. Helsel et al [16] in their systematic review of 20 articles on the usefulness of telemedicine in digestive diseases (IBD, IBS, colorectal cancer, etc.), concluded the potential of telemedicine in gastrointestinal diseases, especially in times of crisis [17, 18].

In our experience, the use of VC was the same in both sexes, especially in patients in their forties, with an absenteeism of 17%, a percentage similar to rescheduling in our face-to-face consultation.

In order to analyze which pathologies are susceptible to be evaluated by VC, we detected that the most diagnosed pathologies were dyspepsia (21%), hepatobiliary diseases (16%), diarrhea (9%), IBS (8.4 %) and GERD (7.7%). IBD had a total percentage of 6.3%, but it went from 1.4% to 11.4% in the COVID-19 pandemic period. The concordance between the suspected diagnosis and the definitive diagnosis was 60%.

Other studies in USA [19] with 124 patients and 144 VC have shown similar data, where the predominant diagnoses were GERD (17.7%), diarrhea (16.9%), hepatobiliary diseases (13.2%), abdominal pain (8.9%) and dyspepsia (8.1%) (Table 2).

COVID-19 pandemic has significantly accelerated the use of telemedicine [19], both VC and telemonitoring, especially in liver diseases and IBD, where they have been of great help in controlling these pathologies in times of crisis. In our hospital, the number of VC has multiplied by 10. During the first 2 months of the COVID-19 outbreak, we have experienced an exponential increase in the number of video consultations, coming from an average of 300 VC of all specialities a day before the COVID-19 crisis to around 5000 a day, going from 27.058 virtual visits made during 2019, to 114.598 in the first 5 months of 2020, and VC in gastroenterology has shown the same evolution, facilitating specialized care and reducing waiting lists [20]. This growing interest in telemedicine is justified by the fear, both of doctors and patients, of the risk of contagion during face-to-face consultations or endoscopic procedures, which can generate serious consequences, such as delay in the diagnosis and treatment of cancer [21, 22]. VC allows establishing a formal and secure communication channel between the citizen and the health professional, reducing non-essential visits to health centers by citizens, and in the event of epidemics, reducing the risk of infection both for citizens and health professionals, ensuring continuity of care.

Conclusion

VC in gastroenterology is an effective alternative to the face-to-face visit, used equally in patients of both sexes, where dyspepsia is the main reason for consultation and diagnosis. It has proven its usefulness especially during the months of the COVID-19 pandemic, where the number of VC has increased 10 times, especially in IBD.

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