material), confirming a major contribution from pulmonary hyperflow.

The patient later developed intense choluria, with high serum levels of bilirubin and lactate dehydrogenase (LDH). Hemolysis was confirmed by undetectable serum haptoglobin, low hemopexin, and a negative Coombs test. The patient had an indolent clinical course with recurrent hemolysis requiring repeated transfusions every 48 to 72 hours and hemodialysis to treat acute kidney failure. After 1 month, the hemolytic episodes persisted, and after the surgical option was again rejected, percutaneous intervention was undertaken in a further attempt to close the small residual defect.

A 6-Fr sheath was inserted through the defect to implant a 6-mm Amplatzer VSD device (video 3 A and B in Appendix B of the supplementary material). A slight residual defect persisted, and a 0.014-inch guidewire was therefore used to position a 4-Fr sheath, through which a 4 × 4 mm Amplatzer Duct Occluder II Additional Sizes device was implanted. This resulted in a minimal residual defect, and the 2 devices were released (Figure 1, Figure 2, and videos 3B-D in Appendix B of the supplementary material). After 6 months, the patient remained asymptomatic, with no hemolysis and restored kidney function.

The Gerbode shunt was first described as a congenital defect,[1] but this type of defect frequently occurs as a complication of surgical or percutaneous cardiac procedures[3] and after tricuspid valve endocarditis.[3,4] Hemodynamic repercussions are an indication for defect closure, often performed via the percutaneous route. Gerbode defects are located close to the His bundle or the aortic valve, and the occluder device must therefore be selected with care to avoid interference. For our patient, we chose Nit-Occlud Lê VSD coil duct occluders because of their efficacy and safety in the closure of perimembranous defects.[2] The high flexibility of these devices reduces the risk of tearing delicate structures; moreover, these devices adapt to complex and irregular defect morphologies and reduce the risk of interference with valve function. To our knowledge, this is the first case report of the use of this device to treat a Gerbode defect and is also the first to report simultaneous implantation of 2 devices of this type.

Hemolysis is a recognized complication of surgical and percutaneous procedures for closing heart defects. The risk of hemolysis is increased by incomplete closure, and although it can be transient,[2,5] hemolysis often persists, a situation that requires reintervention.[6] The high prevalence of hemolysis associated with small residual septal defects is explained by the large pressure difference between the heart chambers. It is also possible that the structure of the devices used might contribute to this complication; however, this hypothesis is not supported by the published data, as the incidence of hemolysis requiring reintervention is $< 5\%$.[2]

Due to concerns about possible interference with aortic valve motion, we selected a smaller device than indicated by initial modeling. This may have contributed to the persistence of the defect; however, we cannot distinguish the potential influence of device size from effects due to defect morphology, tissue tearing, or the device design itself. For the second procedure, concerns about device design prompted us to select an Amplatzer VSD device because of the small size of its closing disks and an Amplatzer Duct Occluder II Additional Sizes device because of its minimal profile.

It is often wise to apply Voltaire's aphorism "perfect is the enemy of good enough"; however, for the closure of Gerbode defects, we must insist on excellence, in the form of the most complete closure possible, in order to avoid complications.

CONFLICTS OF INTEREST

J.L. Zunzunegui Martínez is a proctor for PFM Medical and St. Jude Medical.

SUPPLEMENTARY MATERIAL

Supplementary material associated with this article can be found in the online version available at http://dx.doi.org/10.1016/j.rec.2016.12.019.

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New Model of Integration Between Primary Health Care and Specialized Cardiology Care

Nuevo modelo de consulta externa de cardiología integrado con atención primaria

To the Editor,

Population aging and the higher prevalence of chronic diseases have forced health systems to rethink the way they offer services to make them more effective. Often primary care (PC) and specialized care (SC) do not join forces due to lack of motivation, commitment, and mutual coordination. This has a negative impact on the continuity of care and inefficiencies in resource use, and also brings into question the system itself.[1] Our hospital serves a population of 548 223 inhabitants. It caters to outpatients in specialized units (hospital) and general clinics in 2 PC centers (25 patients per clinic). When echocardiograms are requested, the patients are usually referred to the hospital. Overall, 31.5% of the specialists' time is dedicated to general outpatient clinics.

A pilot project was undertaken to assess whether migration from the classic model for cardiology care to an integrated PC model that combines a one-stop visit (OSV, outpatient clinic with echocardiography), a consulting cardiologist, and a virtual clinic (VC) reduces in-person visits and delays. In addition, we investigated whether the model can define which patients with stable chronic disease can be followed up in PC.

A prospective descriptive study was undertaken (between November 2012 and April 2014). Patients who were referred virtually (with digital electrocardiogram and electronic clinical record) were assessed. The cardiologist decided whether an in-person appointment was necessary. A working group decided which patients with stable chronic disease could be attended in PC (under supervision of the cardiologist via VC) and developed consensus protocols. OSV was defined as a single care action in which diagnosis and treatment were established after performing the additional tests available with this new model in the first visit. As additional resources, this model needs a digital electrocardiogram recorded in PC and an echocardiogram recorded in the cardiology clinic. The administrative area (chosen as it was the only area with digital electrocardiography available) served a population of 33 805 inhabitants. Patients referred by PC through a VC, those who already had an in-person appointment before starting the study (who migrated from the traditional model), and those referred from other specialties were included. Initially, the clinic worked 5 days a week (10 VCs of 5 minutes each and 12 in-person appointments of 20 minutes each: 6 first visits then 6 successive visits). A patient was defined as having chronic stable disease after 3 in-person visits and a 1-year follow-up with no hospital admissions.

There were 2017 in-person visits, 53.6% of which were first visits (and of these 63.7% were the only visit) and 46.4% were successive visits. The requested echocardiograms were performed in the same visit in 97.5% of the patients. Of patients attended in person, 80.1% entered follow-up in PC with virtual follow-up by a cardiologist. There were 1469 patients attended in the VC. An in-person appointment was made for 61.3% of these. During this time, the in-person visits of 89 patients were discussed in a VC (4.4%) and these patients then entered follow-up in PC (Figure). At the end of the project, the delay for an appointment in person was 72 hours compared with a median of 53 days with the conventional system. Currently, this clinic is in operation 3 days a week.

Five consensus protocols were drafted with PC: atrial fibrillation, heart failure, hypertension, valve disease, and ischemic heart disease. These protocols indicated the clinical treatment, referral pathways, and the group of patients with stable chronic disease who could be attended in PC (provided access to the cardiologist was available via VC). Currently, the new care model has been extended to an additional population of 71 002 inhabitants (5 health care centers in operation 4 days a week with different cardiologists). One year after implementation, a delay of less than 3 weeks has been achieved, with similar outcomes in terms of OSV and the percentage of echocardiograms performed during the visit itself (likewise, this population migrated from the traditional system).

The patients benefitted from being attended by a cardiologist, both as the person directly responsible for their care and as the consulting specialist. Our specialty can perform most of the required complementary tests, making it one of the most appropriate for OSV.[2]

Olayiwola et al.[3] showed that electronic consultations can reduce VC and delays without increasing adverse events. Most visits in a SC cardiology center are referrals from PC: liaison between these 2 levels is indispensable for efficient health care.[4] This pilot project has encouraged integration of PC and SC through an OSV, a consulting cardiologist, and a VC. In the study by Falces et al.,[5] the consulting cardiologist plays a leading role. The cardiologists in each SC clinic are proposed as the consultant for PC

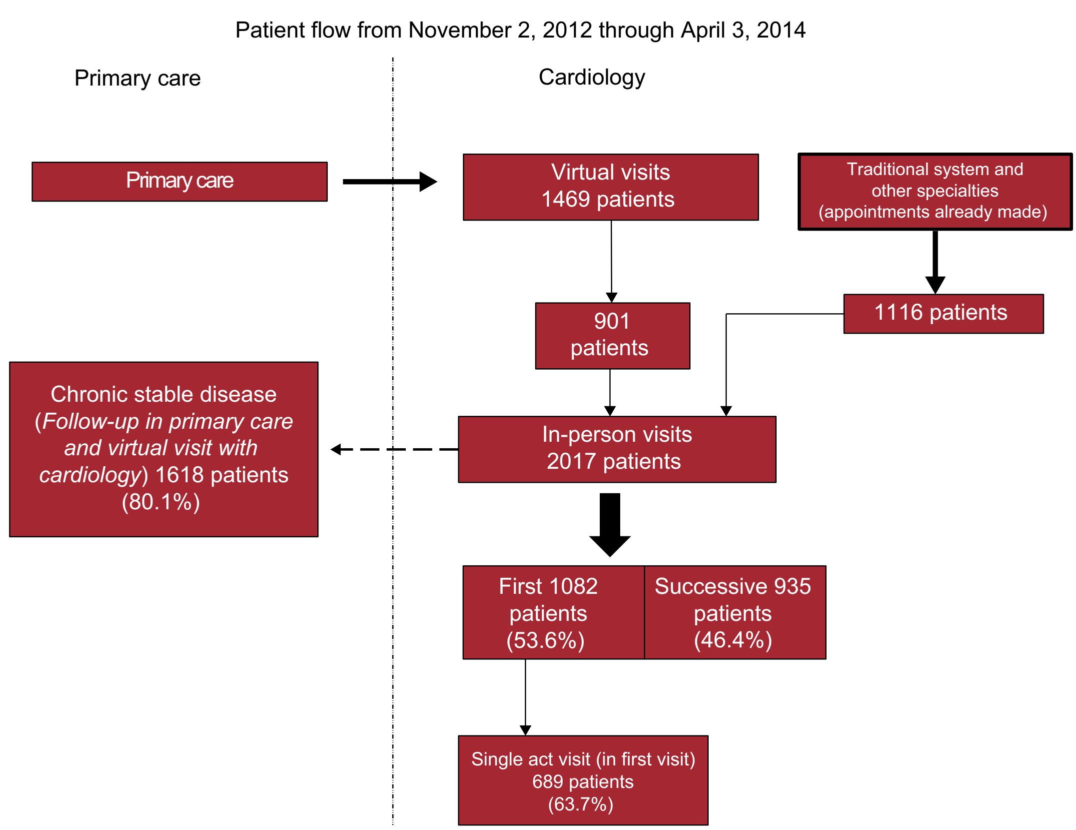

Figure. Patient flow during the study.

physicians who refer patients to them. With the VC, dialogue between PC and SC is increased, with greater decision-making capacity. However, the degree of user satisfaction should be assessed and studies of costs and of differences in morbidity and mortality in comparison with the previous model should be undertaken. In 2017, it is expected that 80% of the catchment area will switch to this new care model. Likewise, as experience accrues, the protocol for integration with PC, as well as the material resources necessary to generalize this model to the entire autonomous community, are being updated. The challenge is to build a health care scenario that integrates the 2 levels of care.

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Is Overweight on the Decrease in the Adult Population? Differences Between the 2009 and 2014 European Health Surveys in Spain

¿Disminuye el exceso ponderal en la población adulta? Contraste entre las Encuestas Europeas de Salud en España de 2009 y 2014

To the Editor,

The NCD Risk Factor Collaboration has recently published the results of a study on global trends in body mass index (BMI) between 1975 and 2014.[1] The study, which included a sample of almost 20 million people from 200 countries, demonstrates the apparent failure of public policies aimed at curbing obesity. At the same time, the persistence of underweight in certain regions of the world demonstrates that malnutrition is still present, and this situation entails other health risks.[2]

The aim of this study was to analyze the trend of the nutritional status of the Spanish adult population over a recent period (2009-2014) based on data from the European Health Surveys in Spain (EHSS),[3] conducted by the Spanish National Institute of Statistics within the framework of the European Health Interview Surveys (EHIS). These surveys collect information on weight and height, as reported by participants. They were asked: "Could you tell me your height, approximately, without shoes? (in cm)" and "How much do you weigh, approximately, without shoes or clothes? (in kg)". Based on the information provided, the BMI was calculated (weight [in kg] / height[2] [in meters]) and individuals were classified into the following categories: underweight (BMI $<$ 18.5), normal weight (BMI $\geq$ 18.5-$<$ 25), overweight (BMI $\geq$ 25-$<$ 30), and obesity (BMI $\geq$ 30). The EHSS includes individuals aged 16 or older, and after exclusion of those younger than 18 years, a sample of 20 234 individuals was studied in 2009 and 21 283 in 2014.

To analyze the effect of age, the sample was stratified into the following age groups: 18 to 39, 40 to 59, 60 to 79 and $\geq$ 80 years. The prevalence of the nutritional categories was calculated with 95% confidence intervals (95%CI) for both the sample as a whole and disaggregated by age and sex. To allow comparisons, the prevalences were adjusted in advance using the direct method, taking the whole series as the standard. A logistic regression analysis was performed (odds ratio [OR]; 95%CI) independently for each BMI category (underweight, overweight, and obesity) compared with normal weight, specifically for each sex, with age adjustment. Statistical processing was carried out using the Stata 12.0 and Epidat 4.1 programs.

Table shows the prevalences of underweight, overweight, and obesity in the Spanish adult population, overall and disaggregated by sex and age, in 2009 and 2014. In both EHSS studied, overweight and obesity increased with age in both sexes between the ages of 18 and 79 years ($P < .001$). At the same time, underweight decreased in persons aged between 18 and 60 years and increased in those older than 80 years. The proportion of excess weight (overweight plus obesity) was higher in men in all ages ($P < .001$), although a larger proportion of obese women was observed after the age of 60 years. In contrast, the prevalence of underweight was higher in all the age groups of the female series ($P < .001$). It should be highlighted that these differences by age and sex are in line with the observations from the ENPE[4] and ANIBES[5] studies, although the age range in both was more limited (up to the age of 64 years).

The total proportion of overweight indicated in the ENPE study (39.3%) was in the range of variation corresponding to the EHSS from 2009 and 2014, while that corresponding to the ANIBES study (35.5%) was slightly lower. In both studies, which are based on anthropometric data, the prevalence of obesity (21.6% and 19.9%, respectively) was somewhat higher than that observed in the present study, which could be explained by the fact that obese individuals tend to underestimate their weight.[6]

With regard to time trend, which was the main purpose of this study, the prevalence of underweight between 2009 and 2014 remained virtually the same in both sexes, while overweight (OR = 0.89; 95%CI, 0.84-0.95; $P < .001$) and obesity (OR = 0.90; 95%CI, 0.82-0.97; $P < .05$) decreased significantly in men. Overweight also decreased in women (OR = 0.90; 95%CI, 0.84-0.96; $P < .01$), although no decrease was found in the prevalence of obesity. Despite the limitation involved in working with information that was self-reported by the individuals surveyed,[6] the positive trend detected in this single 5-year period offers a cautiously optimistic outlook. It would be worth assessing whether