



Justification of a New Scale to Stratify the Risk of Thrombosis in Patients Undergoing Aesthetic Surgery

Jesús Cuenca Pardo*, Guillermo Ramos Gallardo

Members of the Security Committee of the Mexican Association of Aesthetic Plastic and Reconstructive Surgery, Mexico City, Mexico

ABOUT THE STUDY

The most frequent mortal complication in patients who perform plastic surgery procedures is deep venous thrombosis and its consequence the pulmonary embolism. There are many scales that stratify the risk of thrombosis, few of them have a methodological basis; In addition, the existing ones do not contain thrombogenic factors that are generated in cosmetic plastic surgery procedures; as there is no specific scale to assess risk, the existing scores that are used, which causes an inadequate assessment and consequently a frequently failed prophylactic treatment. The existence of a scale that includes thrombogenic factors and that is validated with a strict methodology will make it a valuable instrument, with greater efficiency in detecting patients at risk of thrombosis and therefore prophylactic care will be improved, with a decrease in the risk of morbidity and mortality caused by thrombosis [1].

We developed a scale to stratify the risk of thrombosis in patients who undergo aesthetic procedures; to validate it we use a rigorous methodology composed in different steps.

“La primera fase.- Validación de contenido fue para identificar los factores trombogénicos que se generan en los procedimientos de cirugía estética. Realizamos con una revisión sistemática y un análisis de casos de controles que previamente habíamos registrado en el comité de seguridad de la Asociación Mexicana de cirugía Plástica. Fueron seleccionados los factores de mayor impacto y los más consistentes. Algunos de los factores trombogénicos más importantes que identificamos fueron: El tiempo prolongado de la mayoría de las cirugías estéticas. Los procedimientos múltiples o combinados con cesárea o partos, o con reparación de hernias o de la pared abdominal, procedimientos que con frecuencia se realizan en la especialidad. La liberación de ácidos grasos durante los procedimientos de lipoescultura, que favorecen la agregación plaquetaria y la trombosis. Los efectos en la circulación de las piernas en pacientes de turismo médico que viajan durante varias horas, previas y posteriores a la cirugía. Los efectos trombóticos

ocasionados por la infección por COVID-19 y las vacunas. Es importante resaltar que en mujeres jóvenes no se esperan complicaciones, sin embargo existe un grupo especial que las hace muy vulnerables a la trombosis y son aquellas que tienen antecedentes de ingesta de hormonales como anticonceptivos, venas varicosas, baja movilidad o alguna enfermedad de la colágena; el riesgo aumenta cuando presentan más de 2 de estos factores [1,2]”.

The first phase or content validation was to identify the thrombogenic factors that are generated in cosmetic plastic surgery procedures. We carried out a systematic review and an analysis of control cases that we had previously registered with the safety committee of the Mexican Association of Plastic Surgery. The factors with the greatest impact and the most consistent were selected. Some of the most important thrombogenic factors we identified were: The prolonged time of most cosmetic surgeries. Multiple or combined procedures with cesarean sections or deliveries, or with hernia or abdominal wall repair, procedures that are frequently performed in the specialty. The release of fatty acids during liposculpture procedures, which favor platelet aggregation and thrombosis. The effects on leg circulation in medical tourism patients who travel for several hours, before and after surgery. Thrombotic effects caused by COVID-19 infection and vaccines. It is important to highlight that complications are not expected in young women, however there is a special group that makes them very vulnerable to thrombosis and they are those who have a history of ingesting hormones such as contraceptives, varicose veins, low mobility or some collagen disease, the risk increases when they present more than 2 of these factors [1,2].

The second stage was the validation of the construct or validation by consensus. Medical Doctors from different specialties participated in this stage: Anesthesiologists, cardiologists, angiologists, intensivists and surgeons; they acted as judges and experts and helped select the factors and weigh them; the result of their work was statistically analyzed and published [3].

Correspondence to: Jesús Cuenca Pardo, Members of the Security Committee of the Mexican Association of Aesthetic Plastic and Reconstructive Surgery, Mexico City, Mexico, E-mail: Jcuenca001@gmail.com

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The third stage was to apply pilot tests to test the scale in a group of case-control patients, in order to determine its reliability, consistency, sensitivity, specificity, and predictive values. With the results obtained, we determined the impact and stratified the factors. The results were published with the presentation of two versions, one simplified and the other with the stratified factors. The most effective score was the second, but at the same time it turns out to be more complex and laborious [4].

The fourth stage was the creation of an electronic score using the stratified factors (second score) which we have called (APPERT). The purpose is to simplify the use of the score. The user has to register and fill out a questionnaire with the data of the patients; the form is composed of thrombogenic factors and they are stratified according to their impact; the information is automatically processed and at the end a rating and anti-thrombotic prophylactic recommendations are issued. Users will be able to have access to an unlimited number of patients, they will be able to consult their history and provide feedback on the evolution of their patients. The data obtained are recorded in a database for statistical analysis, which will allow for an increasingly reliable score that is easier to use. We will shortly be publishing and making the instrument available for use by surgeons, anesthesiologists, and physicians who perform the preoperative assessment of patients [5].

The fifth stage is to improve the score and increase its effectiveness, which we will achieve with the information obtained from users. At this stage and following the same methodology, we will add the risk stratification of hemorrhage and bleeding to the score.

CONCLUSION

The scale to stratify the risk of thrombosis is dynamic, currently we have demonstrated a high sensitivity, specificity and

reliability; with the feedback from the users we will be able to perfect it and we will complete it with the stratification of the risk of hemorrhage and bleeding. We are sure that with the use of this instrument, we will achieve greater uniformity in risk assessment and more adequate prophylaxis.

The implemented strategy can be used by other specialties such as gynecology-obstetrics and orthopedics; they should identify the thrombogenic factors of their specialty and develop a more exact scale appropriate to their specialties, with which they will be able to reduce the incidence of thrombosis.

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