



Ultrasonography: road to SCIE listing

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Introduction

Ultrasonography is the official journal of the Korean Society of Ultrasound in Medicine (KSUM), and it was listed in the Science Citation Index Expanded (SCIE) in September 2019. It started as a Korean academic journal in Korean, and has long been established as Korea's leading medical ultrasound journal, but it was quite challenging to develop *Ultrasonography* into an internationally recognized journal by introducing an internationalized editing system to keep pace with the trends of globalization, including the exclusive use of the English language. Through this essay, I would like to share my experiences with the process as the editor-in-chief.

A New Beginning with International Open Access

Our society was founded in 1980, and the *Journal of Korean Society of Ultrasound in Medicine* was launched in 1982. In 2006, the KSUM co-hosted the 11th Congress of the World Federation for Ultrasound in Medicine and Biology with the World Federation for Ultrasound in Medicine and Biology, and the "KSUM" (<https://2020.ksum.or.kr/>) became an international conference since 2010; nonetheless, most of the papers in our journal, which is published four times a year, were case reports, and it was rare for there to be more than 10 original articles per year. As the quality of the society and the academic achievements of our members improved, society members preferred to submit papers to internationally renowned journals, and the quality of the papers published in our journal became relatively low. Its role was reduced to satisfying the required thesis achievements for trainees' qualifications to take the board exam. In this situation, where it was difficult to publish high-quality papers and to publish a sufficient number of papers in each issue, we had two choices: to disband the journal or to globalize it as an English-language journal. At the start of the new KSUM board meeting in 2013, I and the board of directors of the society chose to pursue internationalization based on a full investment of the appropriate resources [1].

First, we changed the journal name to a simple name that made no reference to location, ensured financial support from the society, and switched to a full open-access policy. Although the number of articles in each quarterly issue was maintained, exposure was maximized by moving the date of publication of the first issue from late March to early January. To ensure

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that the journal management aligned with global standards, there was a debate regarding whether to switch to a well-known international publisher; however, we decided to work with a domestic company in order to build up the editing system early, with smooth communication to ensure immediate implementation of our requirements and to save costs. Fortunately, several Korean companies have accumulated sufficient experience and are catching up with global editorial trends. Another reason for selecting a domestic company was the difficulty in registering for PubMed Central early when a commercial company such as Springer or Elsevier manages a journal. M2 Community has not only managed the journal's homepage (<https://e-ultrasonography.org/>) and submission system (<http://submit.e-ultrasonography.org/>), but also carries out JATS XML (Journal Article Tag Suite extensible markup language) and DOI (digital object identifier) work for papers in a timely manner, and plays an important role in maximizing the exposure of our journal through electronic publications ahead of print.

On the Way to Becoming an Internationally Renowned Journal

Since our goal was to be listed in SCIE from the beginning, 15 internationally renowned editors were recruited through networking via the KSUM, and the existing editors were maintained while forming an editorial board. The biggest problem that had to be solved when re-launching the journal was how to attract excellent papers. For at least the first 2 years, the key issue was how to obtain a sufficient number of articles per issue. Because simply changing the journal name and submission system did not lead to an immediate influx of numerous high-quality papers, we actively promoted the journal among our members, branch societies, and acquaintances around the world, both through personal networks and through the KSUM, pointing out the advantages of publishing in our journal, including the free article processing charges, a rapid review and e-publication process, and free mobile apps for all issues with full open access [1]. In the early years of the journal, the provision of some honoraria for distinguished original articles and incentives for invited papers was also helpful to attract high-quality papers.

In order to meet the SCIE listing requirements, and in particular to receive citations, we had to be listed in PubMed (<https://www.ncbi.nlm.nih.gov/pubmed/>) to maximize the exposure of papers in our journal to researchers around the world, as well as to attract papers on the most popular topics. With the help of domestic companies, we were lucky enough to be listed in PubMed Central, enabling us to post our articles in PubMed, in July 2014 by having basic qualifications in terms of journal

editing [2]. In retrospect, I think that early indexing in PubMed Central was the most essential factor in the internationalization of the journal.

The first application for SCIE indexing was done 1 year after the journal system was changed. The first application sought to confirm the international status of *Ultrasonography* and to identify any issues that still needed to be addressed, rather than with an expectation for immediate acceptance. I received a decision letter from Thomson Reuters in November 2015 stating that *Ultrasonography* could not be selected because it was not cited enough by journals in the Web of Science (WoS) Core Collections. Instead, the journal was accepted for a new edition of WoS launched at that time, referred to as the Emerging Sources Citation Index (ESCI), which would make our articles discoverable and citable on WoS with coverage of journal content published starting in 2015 [3]. ESCI journals do not receive an official Journal Citation Ranking impact factor (IF), but the articles cited by ESCI-listed journals are considered meaningful because those citations are reflected in the official IF of SCIE-listed journals.

Raising the Citation Rate and the Second Challenge

Just after *Ultrasonography* was listed in ESCI, the management of SCIE was transferred from Thomson Reuters to Clarivate (<https://clarivate.com/>). On the table of the journal evaluation process for the WoS Core Collections [4], citation analysis appeared to be the most important factor for the transition from ESCI to SCIE listing. After the initial rejection, in order to pursue more international diversity, the role of domestic editors was limited to section editors and we increased the number of international editors with the help of individual contacts and networking through branch societies. From the time that the journal was re-launched to 2016, the editorial board grew from 18 editors from eight countries to 33 editors from 22 countries.

Since the reason that *Ultrasonography* was not listed in SCIE was that there were too few citations, we focused on increasing the citation rate. To maximize the exposure time, accepted articles after the peer review process were uploaded to PubMed immediately after the layout was edited (i.e., before the official publication). After the official publication of each issue, we collected as many e-mail addresses as we could find online and sent the table of contents to global investigators, as well as to our society members. Meanwhile, based on our initial 2 years of experience, we found that citations for review articles were nearly three times higher than those for original articles, while there were few citations for case reports. Therefore, while continuing to attract review articles on hot topics, we changed the journal policy to exclude case reports [5].

Therefore, when applied for SCIE listing a second time, our self-calculated IF for 2016 was 2.075 and real-time monitoring of the IF for 2017 showed a further increase. It was expected that the conditions for inclusion in SCIE would be met, and we received a decision letter for our second submission for SCIE listing from Clarivate in September 2017. We failed again.

Two Years of Waiting and the Third Challenge

In the decision letter, three reasons were given for why they did not select *Ultrasonography* for inclusion in SCIE. First, through an evaluation process considering many factors, their analysis of *Ultrasonography* placed it below the second quartile of the Radiology, Nuclear Medicine & Medical Imaging subject category. Second, their Radiology, Nuclear Medicine & Medical Imaging subject category consisted of over 100 total journals, which included satisfactory representation of East Asian titles. Third, the international diversity of the journal's authors was not sufficient for the global scope of SCIE. It was not easy for me to agree with these three reasons.

According to the self-calculated IFs of 2.075 (58th among 128 journals) in 2016 and 2.838 (39th among 129 journals) in 2017 in the Radiology, Nuclear Medicine & Medical Imaging subject category of SCIE, it was difficult to understand why the journal's status would be considered to be in the middle or why it would be a reason for rejection, even when compared to journals already listed in SCIE [6].

I also searched to see whether it was true that there were enough relevant SCIE journals from East Asia. The position of Korea in the diagnostic imaging category can be estimated to some extent by referring to its status in the annual conference and official journal of the Radiological Society of North America, a representative society of radiology. Korea ranks just after the United States, along with Japan and China, in terms of submissions and publications in *Radiology* (<https://pubs.rsna.org/journal/radiology>). During the most recent 5 years (from 2016 to 2020), the authors of 167 articles were Korean, while 733 articles were written by authors in the United States. Comparing Korea (n = 167) to China (n = 134) and Japan (n = 79), it can be seen that Korea overwhelms other East Asian countries in the number of published papers. However, in terms of the number of relevant journals currently listed on SCIE, the United States accounted for more than 50% (65 out of 128), while the total number of journals from East Asia was 7, and the *Korean Journal of Radiology* was the only Korean journal. It is difficult to compare simple figures, but since the number of papers published by Korean authors in *Radiology* is slightly one-fifth of the number of papers published by authors from the United States, the presence of a

serious skew towards North America and Europe is shown by the fact that Korea has fewer than one-sixtieth as many SCIE journals in this field than the United States. Therefore, the number of SCIE journals was clearly too small considering the ability of East Asian researchers in comparison to the representation of journals from Europe and America. Meanwhile, when we made our second application for SCIE listing, international authors accounted for 25% to 30% of all published articles annually in *Ultrasonography*, so the judgment that the international diversity of the journal was insufficient appeared highly subjective.

According to the policy of Clarivate, we had to wait 2 more years to apply a third time for SCIE listing. During these 2 years, we could not solve the problem of regional bias in the number of SCIE journals, so we kept the policy of raising the IF and increasing the proportion of foreign authors. Fortunately, a combined annual meeting of the Asian Federation of Societies for Ultrasound in Medicine and Biology and the KSUM was held in Korea in 2018. We actively commissioned international speakers invited to this conference to write review articles. Subsequently, papers by international authors accounted for over 50% of all papers published in 2018 and 2019 [7]. Regarding the IF and journal ranking, which were related to the first reason of rejection, the IF was 2.813 in 2018 (45th out of 129 SCIE journals in the relevant category). During this period, we did not recommend or suggest self-citations to our journal authors. The self-citation rate was approximately 6% and the overall citation rate of the papers in *Ultrasonography* by Korean researchers in other WoS Core Collection journals was approximately 20%.

SCIE Listing and Future Directions

In the second rejection letter sent in September 2017, Clarivate said that they would welcome the resubmission of the journal for SCIE evaluation in September 2019. A year later, in September 2018, we made a PowerPoint file about the latest advances of *Ultrasonography* with arguments against the three reasons for rejection that were difficult for us to agree with, and emailed it to Clarivate. We did not receive a response to the email. The third submission was sent in early September 2019, and we received an email telling us that *Ultrasonography* had been selected for SCIE listing a week later [8].

After being listed in SCIE, the number of submissions has tripled in the last 8 months compared to the previous year. In particular, the number of original articles from domestic researchers increased at a rate similar to that of overseas submissions. To continue the policy of actively publishing up-to-date guidelines of ultrasonography and review articles on hot issues to maintain or increase the IF, the editorial policies

need to be adjusted. At the same time, solely having a high IF is not enough for *Ultrasound* to be considered a leading academic journal. Ultimately, in order to increase the number of excellent papers on various topics according to the aims and scope of *Ultrasound*, which covers general clinical ultrasound, we will have to increase the number of articles per issue. Effective short-and long-term strategies are required to increase the quantity of articles, along with improving the quality of the journal's content [9,10].

Conclusion

There are many ways to evaluate a journal, but it is well known that many countries and people estimate a journal's international reputation based on whether it is listed in SCIE. To be listed in SCIE, it is first necessary to internationalize the editorial system, and PubMed indexing seems to be essential to maximize awareness of published papers. To increase the citation rate, which appears to be most important factor for being listed in SCIE, the key point is to select internationally attractive authors and themes that will be consulted by many readers and frequently cited. To this end, internationalization and financial support from the related academic society, which can provide various connections, are essential. If this process results in a competitive IF in the relevant field, along with diversification of authors in terms of nationality, being listed in SCIE is a feasible achievement.

Conflict of Interest

No potential conflict of interest relevant to this article was reported.

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