

Is the research of lip prints and palatal rugae undertaken in India a misdirected endeavor? An opinion based on trends in publication in this journal and international journals



Over the last half decade or so, I have read with delight as the number of articles on forensic odontology coming out of India has risen steadily. The profession owes its gratitude to dentists of different hues and specialties for this welcome wave. Recognizing the interest in the burgeoning specialty, the Indian Association of Forensic Odontology released its official publication, the *Journal of Forensic Odontology*, at its 5th National Conference in January 2008 in Chennai. Due to naming issues, this periodical has been published in its current avatar-the *Journal of Forensic Dental Sciences* – since 2009.

Contributors to this journal come from diverse corners of the country and beyond, and have usually raised pertinent scholarly queries and provided convincing answers. But I have also noticed a rather alarming trend of what may be a misdirected venture in research in forensic odontology in India and its publication in this journal-a disproportionately large number of articles are on just two topics, namely, lip prints (cheiloscopy) and palatal rugae (rugoscopy). I say this is alarming because I believe they do not deserve this degree of attention since their actual use and application in the practice of forensic dental casework is negligible if not non-existent.

Now, let us look at the figures. Of the 88 exclusive forensic odontology articles published in this journal in its 5-year existence (from January 2009 to December 2013), 25 were related to lip prints and palatal rugae, accounting for 28.4% of the total articles. Contrast this with the percentage of articles in these topics (calculated as a proportion of forensic odontology articles) in the same period in five leading international forensic sciences journals -*International Journal of Legal Medicine* (2.8%), *Forensic Science International* (1.0%), *Journal of Forensic Sciences* (5.4%), *Journal of Forensic and Legal Medicine* (6.0%), and *Forensic Science, Medicine, and Pathology* (0.0%). The *Journal of Forensic Odonto-stomatology*, an international journal devoted exclusively to publishing forensic odontology articles, carried just 4 out of a total of

151 full-length articles and abstracts in the 5-year interval, amounting to just 2.7%.

In all, 20 articles exclusively devoted to lip prints and 19 devoted exclusively to palatal rugae, totaling 39, were published in the seven aforementioned journals in the preceding 5 years, with this journal alone accounting for 64.1% (25/39) of them. When one looks at the number emanating from India, it is a staggering 84.6% (33/39 articles)-the increase in number since a few Indian researchers have published their work in the above international journals.

These figures have been obtained through a careful sifting of the articles published in these journals. My assessment included research papers, editorials, reviews, case reports, technical notes, conference supplements, letters to editors, and response from authors, but excluded book reviews, journal reviews, and obituaries. Again, to emphasize, only the articles exclusively on forensic odonto-stomatology topics were considered; if odontology was combined with another topic (e.g. age estimation using teeth and ossification of the hand-wrist bones), such papers were excluded; also excluded were articles related to the craniofacial bones. This was to enable a “fair” comparison, considering that the five forensic sciences journals would have had more of the latter two types of articles (potentially further decreasing the percentage of lip print and palatal rugae articles) while the two forensic odontology journals would not.

The bedrock of forensic odontology is, well, dentition. The hard tissues which constitute the teeth and the robustness in them allow them to withstand peri- and post-mortem insults encountered in incidents involving incineration, trauma, and decomposition. Forensic odontology has found use, and developed, precisely for this reason - the recovery of teeth in deceased subjects (and, on occasion, the recovery of marks inflicted during crimes). Now, there is no doubt that palatal rugae have been used in post-mortem identification and lip prints in crime investigation, but these are too few

and far in between, as evidenced by a lack of sufficient case reporting (palatal rugae and the lips do not withstand the vagaries of nature and accidents the way teeth do).


In my experience of over 11 years across three countries (Australia, Nepal, and India), both as a graduate student and as a qualified specialist, such case referrals have been non-existent. So, it merits to ask the question, "Why is there so much of research and publication in these areas in this journal and from Indian researchers?" One reason may be the particular interest in forensic odontology research shown by oral pathologists and oral physicians in India (since the Dental Council of India has linked forensic odontology to these two specialties) and their possible attraction to researching oral *soft tissues* rather than hard tissues. Indeed, 26/39 (66.7%) lip prints and palatal rugae articles originated from these two departments in the country; while Public Health Dentistry and Pediatric Dentistry contributed two each, other departments including Prosthodontics and Orthodontics authored one each. The latter two specialties have focused on palatal rugae, considering their relation to denture fabrication and tooth movement, respectively.

Now, one may argue that the lesser number of articles on these topics in international journals is because of such research being submitted to, and published in, this journal; hence

these papers, which otherwise may have found their way into international journals, are not published there owing to the option available to authors of publishing in this journal. If so, the issue that needs to be considered is why the editorial board of the *Journal of Forensic Dental Sciences* continues to accept articles on these topics. Chances are that the journal is keen to encourage research in forensic dentistry *per se*, irrespective of the topic, and the editors must be commended for this noble view. However, it is important that the journal reflect a diversity of articles that is commensurate to their application in forensic dental casework. In fact, I can understand if there are proportionally greater numbers of articles in certain topics owing to such areas being more regularly applied and practiced. For example, adolescent and adult age estimation is more commonly encountered in the Indian context and deserves a far greater representation than the 18.2% of articles it currently occupies in this journal. Perhaps it is time to rethink, and reset, our priorities in so far as topic selection is concerned in forensic odontology research, which must not just be undertaken as an end in itself but with the intention of applying the results, interpretations, and conclusions derived in routine casework. Unfortunately, scholarly activity in palatal rugae and lip prints is unlikely to achieve regular practical usage in forensic odontology and may fall short of the expectations and objectives of translational research.

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