Limited use of a Nazi-era anatomy atlas in the operating theater: remembering the victims

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TO THE EDITOR:

The German and Austrian medical professions played an instrumental role in supporting the Nazi regime by promoting ideas of racial hygiene and enforcing Nazi policies in academic institutions and elsewhere. During World War II (WWII) at least 1377 corpses of prisoners executed by the Nazi judicial system were transferred to the Vienna University Institute of Anatomy [1]. These victims, and possibly many others, were used for macroscopic dissections to be used in the production of anatomical illustrations. The anatomists remaining at Vienna University in 1938 were headed by Eduard Pernkopf, a long-time loyal member of the National Socialist movement.

Pernkopf conducted the anti-Jewish policies as dean of the faculty of medicine starting in 1938, resulting in the ousting of many faculty and students, and integrated the Nazi ideology into the official curriculum. He was later appointed president of the university. A testimony to the alliance of this anatomist and his medical illustrators with the Nazis is the appearance of swastikas and SS symbols throughout the illustrations. Their work culminated in four-volume anatomical atlases published between 1937 and 1960. After the war, and being stripped of all titles and appointments following 3 years of imprisonment at an allied prisoner of war camp, Pernkopf returned to Vienna University to continue his work on the atlas. Although arrested, he was never formally charged in court for his crimes.

The first volume of the atlas was published in 1937, the second volume in 1942 [2], and the third and fourth in 1952 and 1960, respectively. The first two-volume U.S. English edition appeared in 1962–1963. The author’s affiliation with the Nazis was publicly revealed 35 years ago. After official inquiries confirmed that the illustrations depicted Nazi victims, the publication of the atlas ceased in the late 1990s.

To this day, Eduard Pernkopf’s Topographische Anatomie des Menschen (Topographical Anatomy of Man) is highly regarded by anatomists and surgeons for its accuracy, quality, and extraordinary detail [2]. In recent international surveys, 13% of the peripheral nerve surgeons and 10% of the oral and maxillofacial surgeons stated that they currently use the atlas. Some claim it is unmatched in its ability to inform complex operative planning, resulting in better surgical outcomes. Questions about the ethicality of using the atlas from the victim’s point of view led to the formulation of the Vienna Protocol, a responsum stemming from Jewish medical ethics. Based on the Vienna Protocol, a case study with a discussion on the use of the atlas was published in 2019 by a group of clinicians and scholars of ethics and religion [3]. Drawn from the Jewish principle of Pikuach Nefesh (saving a life), they concluded that the use of the atlas for patient benefit override other ethical considerations, with an important caveat that those who use it acknowledge its past and memorialize the victims of the Nazi regime whose bodies were used for the creation of the illustrations.

This recent discussion of the ethical considerations regarding the limited and conditional use of the atlas was one of the factors that led to the donation of the remaining original images and limited publishing rights by their last owner, the Elsevier Group, to the Medical University of Vienna. In January 2021, the Medical University of Vienna announced it will exhibit and enable limited and conditional publication of individual images from the atlas [4]. They clearly state that authorization for its use will be given only, “if an appropriate and sensitive historical contextualization is guaranteed.” These guidelines permit the use of the illustrations not only in specific operative cases, but also for the purposes of surgical education.

By putting the work on display, the university acknowledges the importance of the atlas not so much as a medical textbook, but as a historical object that reflects the role of anatomists in unethical practices [5]. Moreover, the display and its given context will serve to memorialize the fate of the victims whose bodies were delivered to the Vienna Institute of Anatomy. Since its official publication stopped more than two decades ago, the atlas continues to circulate in used-book markets and over the internet, without a disclosure on its legacy. These new publishing guidelines will hopefully help ensure that the atlas is distributed only with the appropriate acknowledgments.

One of the remaining controversies surrounding the atlas has to do with the use of the author’s name in the title. While some feel that the contemporary use of the name further preserves his legacy as a prestigious anatomist, others maintain that a name change is comparable to the post-war whitewashing of medicine during the Nazi period. By all accounts, it should be expected that any mention of the atlas be connected with its Nazi history and with an act of conscious acknowledgement of the victims whose bodies served for some of the images.

DISCLAIMER
RA is the grandson-in-law of Dr. Yehuda Matot, 1938 alumnus of the Vienna Medical School, who fled Austria on the eve of the Pernkopf anti-Jewish policies.

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LETTER
A virtual memory T cell spectrum

Virtual memory T (TVM) cells acquire a memory phenotype in the absence of foreign antigen and are believed to develop in response to self-antigen exposure. However, their role in protective immunity against foreign pathogens is not well understood. Using specific pathogen-free mice infected with influenza A virus, Hou et al. demonstrate that TVM cells rapidly infiltrate the lungs in a CXCR3-dependent manner, where they expand and promote early viral control. Compared with naïve T cells, TVM cells more efficiently gave rise to poised for effector and memory responses, respectively. Thus, TVM cells undergo functional specialization, and self-reactive T cells can productively contribute to antigen-specific responses against invading pathogens.

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Eitan Israeli

Gut microbiota signatures are associated with toxicity to combined CTLA-4 and PD-1 blockade

Treatment with combined immune checkpoint blockade (CICB) targeting CTLA-4 and PD-1 is associated with clinical benefit across tumor types, but also a high rate of immune-related adverse events. Insights into biomarkers and mechanisms of response and toxicity to CICB are needed. To address this, Andrews and co-authors profiled the blood, tumor and gut microbiome of 77 patients with advanced melanoma treated with CICB, with a high rate of any ≥ grade 3 immune-related adverse events (49%) with parallel studies in pre-clinical models. Tumor-associated immune and genomic biomarkers of response to CICB were similar to those identified for ICB monotherapy, and toxicity from CICB was associated with a more diverse peripheral T-cell repertoire. Profiling of gut microbiota demonstrated a significantly higher abundance of Bacteroides intestinalis in patients with toxicity, with upregulation of mucosal IL-1β in patient samples of colitis and in pre-clinical models. Together, these data offer potential new therapeutic angles for targeting toxicity to CICB.

Eitan Israeli

BNT162b2-elicited neutralization of B.1.617 and other SARS-CoV-2 variants

Liu et al. showed that serum samples taken from 20 human volunteers, 2–4 weeks after their second dose of the BNT162b2 vaccine, neutralize engineered severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) with a USA-WA1/2020 genetic background (a virus strain isolated in January 2020) and spike glycoproteins from the recently identified B.1.617.1, B.1.617.2, B.1.618 (all of which were first identified in India) or B.1.525 (first identified in Nigeria) lineages. Geometric mean plaque reduction neutralization titters against the variant viruses, particularly the B.1.617.1 variant, seemed to be lower than the titer against the USA-WA1/2020 virus, but all sera tested neutralized the variant viruses at titers of at least 1:40. The susceptibility of the variant strains to neutralization elicited by the BNT162b2 vaccine supports mass immunization as a central strategy to end the coronavirus disease-2019 (COVID-19) pandemic globally.

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