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Forensic Autopsies from 1984 to 1993 in Vienna, Austria

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ABSTRACT: In Austria every death is subject to an examination by a medical doctor authorized by the local health authority. If death is suspected to be unnatural and/or perpetrated by another person, this doctor has to report it to the police. Depending on the investigation results, the examining magistrate in charge demands a judicial autopsy at the Institute of Forensic Medicine. In 1989, 41 murders of old patients by nursing assistants in a Viennese public hospital were disclosed. The main aim of this retrospective study was to determine any change in the demand for forensic autopsies by the Viennese health authority, as well as by the criminal court, after 1989. Furthermore, it was of interest to analyze the reporting practices of medical doctors examining corpses, as well as the reaction of the criminal court during the study period. After 1989, there was a significant increase of non-judicial and judicial autopsies, performed by Viennese forensic pathologists. In addition, there was a significant increase of reports to the police by coroners as well as by forensic pathologists, paralleled by a higher rate of forensic autopsies demanded by the examining magistrate. This increase of forensic autopsies took place even though the overall rate of deaths in Vienna significantly decreased during the 10-year study period. Thus, the disclosure of 41 murders in the Viennese hospital in 1989 can be assumed as a turning point in the reporting practices of Viennese coroners, as well as the autopsy rate handled by Viennese forensic pathologists.

KEYWORDS: forensic science, forensic pathology, death, medical examination, autopsy, Vienna, Austria

In Austria, a small country in Central Europe with about eight million inhabitants, there can be no burial of a deceased person without a medical examination. Every death and the corresponding case history have to be examined by a medical doctor authorized by the local health authority. If death takes place in a public, non-profit hospital this examination is performed by the clinical pathologist, who decides whether a clinical autopsy is required (1). In case of death outside a public hospital the coroner has to be called (2,3). The coroner is not allowed to certify death without a diagnosis report—mentioning a serious disease as a possible cause of death—by the treating physician who, on his part, is generally not empowered to file a death certificate. If no sufficient diagnosis report can be produced, a non-judicial autopsy under the statute of the local health authority has to be performed by a forensic pathologist. According to the Austrian code of criminal procedure and the Austrian code of medical law, medical doctors are obliged to report to the police if the death of a person is suspected to be violent or due to foul play. Depending on investigation results, the examining magistrate in charge demands a forensic autopsy under the statute of the responsible court. These judicial postmortems are also performed by a forensic pathologist (Fig. 1) (4,5). In such cases the forensic pathologist testifies in court as an expert witness. However, in this death investigation system, which is the same all over Austria, forensic autopsies play a pivotal role.

In March 1989, 41 murders of elderly patients by four female nursing assistants in a Viennese public, non-profit hospital were disclosed due to the testimony of another female nurse. All victims had to be exhumed for forensic autopsy (6).

The main aim of this retrospective study was to investigate any changes in the figure and rate of non-judicial and judicial autopsies, performed by forensic pathologists at the Institute of Forensic Medicine of the University of Vienna, after the disclosure of these hospital murders in 1989. Furthermore, it was of interest to analyze the reporting practices of clinical pathologists, coroners, and forensic pathologists before and after 1989.

Methods

For this purpose coroners' reports and records of postmortems performed at the Institute of Forensic Medicine in Vienna between 1984 and 1988 were analyzed and compared with those from 1989 to 1993.

Distribution of variables of interest were described by means and rates per 1000. Time trends were assessed by linear regression models. To detect differences in the various variables before and after 1989, t-tests were applied. All p-values are the results of two-sided tests. The SAS® statistical software system (SAS Institute, Cary, NC) was used for calculations.

Results

Study Population

Although the population of Vienna officially increased from 1,501,717 in 1984 to 1,642,391 in 1993 (Table 1), the number of deaths decreased from 23,457 to 20,159. Thus the overall death rate significantly declined during the study period (regression analysis: $p < 0.001$). In contrast, the figure and rate of non-judicial postmortems per 1000 deaths increased slightly from 1984 to 1988, followed by a statistically significant increase (regression analysis: $p < 0.0002$). Furthermore, the figure of judicial postmortems decreased from 1984 to 1988 by more than 12%, followed by a steep, statistically significant increase of the figure as well as the rate per 1000 deaths (regression analysis: $p < 0.001$).

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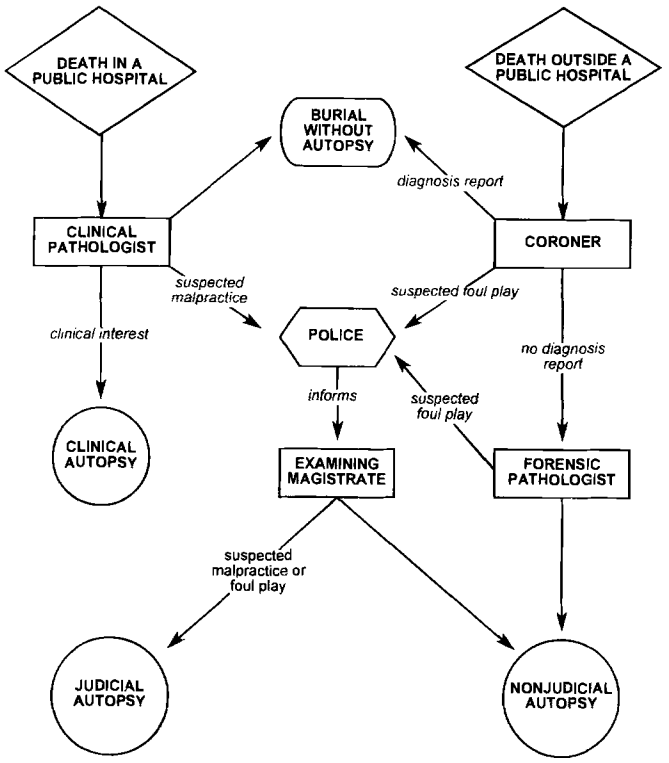

FIG. 1—*Procedure of death examination in Vienna, Austria.*

TABLE 1—*Forensic autopsies in Vienna from 1984 to 1993.*

Year	Inhabitants	Deaths	Non-judicial	Forensic Autopsies		
				Rate*	Judicial	Rate*
1984	1501717	23457	2073	88.4	583	24.9
1985	1489153	23727	2148	90.5	540	22.8
1986	1481339	22828	2176	95.3	502	22.0
1987	1479841	22193	2180	98.2	529	23.8
1988	1482825	21644	2169	100.2	512	23.7
1989	**1487577**	**20875**	**2183**	**104.2**	**673**	**32.2**
1990	1508120	20835	2178	103.0	685	32.8
1991	1536442	20853	2201	105.5	733	35.2
1992	1561133	20898	2423	115.9	810	38.8
1993	1642391	20159	2343	116.2	851	42.2

*Rate per 1000 deaths.

Reporting Practices of Medical Doctors Performing Postmortem Examinations

The number of reports to the police by clinical pathologists because of suspected malpractice or foul play, decreased from 1984 to 1988 by more than 18%, and reached its lowest value in 1991. Furthermore, there was no difference before and after 1989 regarding the rate of reports to the police per 1000 deaths examined by clinical pathologists (Table 2). In contrast, the rate of reports by Viennese coroners, as well as by forensic pathologists, significantly increased after 1989 (t-test: $p < 0.013$ and $p < 0.001$, respectively) (Tables 3 and 4).

Moreover, the examining magistrate demanded significantly more forensic autopsies, based on reports to the police by clinical pathologists, coroners, and forensic pathologists after 1989 (t-test: $p < 0.001$) (Table 5).

TABLE 2—*Reporting practices of clinical pathologists before and after 1989.*

Year	Reports/Deaths*	Rate†	OR‡
1984	671/18928	35.5	0.963
1985	681/19089	35.7	0.969
1986	667/18394	36.8	0.986
1987	636/17743	35.8	0.974
1988	550/16636	33.0	0.921
1989	**567/15421**	**36.8**	**1.000§**
1990	553/15306	36.1	0.981
1991	529/15145	34.9	0.948
1992	538/15068	35.7	0.970
1993	549/14528	37.8	1.029

*Deaths in public hospitals examined by clinical pathologists.
†Rate of reports to the police by clinical pathologists per 1000 deaths examined by them.
‡OR, odds ratio.
§Referent.

TABLE 3—*Reporting practices of coroners before and after 1989.*

Year	Reports/Deaths*	Rate†	OR‡
1984	436/4529	96.3	1.006
1985	370/4638	79.8	0.724
1986	357/4434	80.5	0.667
1987	338/4450	76.0	0.793
1988	383/5444	70.4	0.801
1989	**522/5454**	**95.7**	**1.000§**
1990	537/5529	97.1	1.016
1991	615/5708	107.7	1.063
1992	795/5830	136.4	0.970
1993	832/5631	147.8	1.014

*Deaths examined by coroners.
†Rate of reports to the police by coroners per 1000 deaths examined by them.
‡OR, odds ratio.
§Referent.

TABLE 4—*Reporting practices of forensic pathologists before and after 1989.*

Year	Reports/Deaths*	Rate†	OR
1984	21/2073	10.1	0.328
1985	23/2148	10.7	0.347
1986	17/2176	7.8	0.253
1987	33/2180	15.1	0.493
1988	37/2169	17.0	0.577
1989	**66/2183**	**30.2**	**1.000§**
1990	78/2178	35.8	1.193
1991	83/2201	37.7	1.257
1992	75/2423	31.0	1.026
1993	71/2343	30.3	1.002

*All deaths examined by forensic pathologists under the statute of Health Authority.
†Rate of reports to the police by forensic pathologists per 1000 deaths examined by them.
‡OR, odds ratio.
§Referent.

TABLE 5—*Forensic autopsies demanded by examining magistrate before and after 1989.*

Year	Judicial Autopsies/ Reports*	Rate†	OR‡
1984	583/1061	54.95	0.766
1985	540/1034	52.22	0.724
1986	502/980	51.22	0.667
1987	529/964	54.88	0.793
1988	512/910	56.26	0.800
1989	**673/1108**	**60.74**	**1.000§**
1990	685/1116	61.38	1.016
1991	733/1143	62.38	1.063
1992	810/1178	68.76	0.970
1993	851/1298	65.56	1.014

*Figure of reports by clinical pathologists, coroners, and forensic pathologists.

†Rate per 1000 reports to the police by clinical pathologists, coroners, and forensic pathologists.

‡OR, odds ratio.

§Referent.

Discussion

After 1989 there was a significant increase of non-judicial and judicial autopsies performed by forensic pathologists, at the Institute of Forensic Medicine of the University of Vienna, under the statute of the Viennese Health Authority, as well as the examining magistrate responsible for the investigation of violent deaths. Furthermore, there was a significant increase of reports to the police by coroners as well as by forensic pathologists, paralleled by a higher rate of forensic autopsies demanded by the examining magistrate. This increase of forensic autopsies took place even though the overall rate of deaths in Vienna significantly decreased during the 10-year study period. Furthermore, the percentage of autopsies performed by clinical pathologists at the Institute of Pathology of the University of Vienna—in the Viennese General Hospital, the biggest public, non-profit hospital in Vienna with almost 2000 beds—unfortunately decreased after 1989 by about 5% (7), probably as a result of the increasing load of diagnostic procedures on patients.

Thus, by all means, the disclosure of 41 murders in the Viennese hospital in 1989 can be assumed as a turning point in the reporting practices of Viennese coroners, as well as the autopsy rate handled by Viennese forensic pathologists. After a chance remark by a nurse to a ward doctor in March 1989, four nursing assistants were charged with the murder of 41 elderly patients. The nurses confessed to drowning patients by forcing water down their throats while holding their nostrils closed. Other methods of killing included injection of overdoses of insulin or flunitrazepam. The nurses were sentenced to prison for at least 15 years (6).

As in Italy and Japan, Austrian forensic postmortems are performed under two different statutes (8,9). Although non-judicial autopsies are performed under the statute of the local health authority, judicial ones are ordered by the examining magistrate responsible for the investigation of violent deaths. In general, both forms of autopsies are done by forensic pathologists who have to pass six years of postgraduate specialization at one of the four existing University Institutes of Forensic Medicine. Judicial autopsies play a vital role in Austrian court proceedings, especially in cases of malpractice, suspected homicides, and traffic accidents. Thus, for example, the presence of the forensic pathologist as an expert witness during the trial of the four nurses was a prerequisite. In contrast to other countries, the Austrian coroner has to be a medical doctor, who is authorized by the local health authority to perform examinations of corpses at the death scene (10–15). Usually general practitioners become coroners as a secondary job, after having passed a compulsory postgraduate course. This course runs for two semesters and includes 19 double lessons, in which all areas of forensic medicine are covered, plus one double lesson with a demonstration postmortem (16).

Nevertheless, the comprehensive and properly performed investigation of deaths is necessary to maintain the health, safety, and well-being of society (13), even though the ethical basis of autopsies is sometimes discussed (17,18).

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