HISTORY OF MEDICINE

Medical Issues on Marilyn Monroe's Life and Death; A Retrospective—Part 2

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ABSTRACT

Objective: **Apart from film studies, Marilyn Monroe's name recognition and career profile had generated investigations and research on diverse themes, since 1956. To mark the 60th anniversary of her death, we present a retrospective on the medical issues Marilyn faced during her short life span and subsequently, after death.**

Methods: **For reliable information on Marilyn's life, a ghosted autobiography, trusted biographies as well as recognized reference sources were studied.**

Results: **A chronology of health-related major life events of Marilyn is presented in a table. For genetic predisposition, gynecological problems and circadian rhythm sleep disorders, Marilyn consulted with at least 11 doctors in New York and Hollywood. Though they could offer her prescriptions and some solace to relieve her from pain, Marilyn's medical caretakers failed to prevent her premature death at the age of 36.**

Conclusion: **It's unfortunate that Marilyn was served with a horrible genetic disposition, being born to an invalid mother Gladys who suffered from mental disorders, and both maternal grandparents inflicted with brain disorders. Based on current knowledge of endogenous prostanoids and oxytocin, we propose that the fundamental cause of Marilyn's morbidity could have been imbalances in prostaglandins and oxytocin in the brain and reproductive system that made her sick with insomnia and gynecological symptoms such as dysmenorrhea and endometriosis.**

[Continued, from Part 1, published in the previous issue.]

KEY WORDS

celebrity, barbiturates, endometriosis, insomnia, polypharmacy, sex symbol

DISCUSSION

A synopsis of medical history of Marilyn, including doctors who had treated her, hospitals visited by her, drug use, circadian rhythm sleep disorder (i.e., asynchrony of body clock or 'lateness' in common parlance) and suicide attempts is available in the encyclopedia compiled by Victor[88)]. As the origin of sleep medicine, as a discipline, post-dates Marilyn's death in 1962, it is tempting to postulate that had Marilyn survived another quarter century, she might have been saved by therapeutics for circadian rhythm sleep disorders[95)].

Sexual promiscuity

That Marilyn had a defective gynecological system in her body (menstrual pain, endometriosis etc.) by either design or happenstance (such as sexual molestation) was a fact[90,94)]. Though many Marilyn enthusiasts among her biographers sympathize with her as being sexually exploited, one cannot ignore another fact that Marilyn self-destructed herself via her own career improving decision steps by willfully tampering with her defective gynecological system by opting the route of sexual promiscuity. Marilyn herself had acknowledged this two years before she died in a conversation, as follows:

"When I started modeling, it (i.e. sex) was part of the job. All the girls did. They weren't shooting all these sexy pictures just to sell peanut butter in an ad or get a layout in some picture magazine. They wanted to sample the merchandise, and if you didn't get along, there were 25 girls who would. It wasn't any big dramatic tragedy. Nobody ever got cancer from sex."[94)]

This was stressed by Claire Booth Luce, in her 1964 *Life* magazine essay: "What Marilyn's sex life was like in the days before she sought to storm the golden gates of Hollywood can only be surmised. It cannot, even by today's easy standards, have been 'moral'. For she had no father or mother image to guide her as to the proper behavior of boys and girls. Never having known the face of marital or parental or even fraternal love, she was certainly incapable of giving what she herself had never known."[96)]

Apart from her casting couch bonding ties with numerous photographers, Hollywood agents and producers, Marilyn was suspected of having lesbian relationships Marilyn had with actress Joan Crawford (1908?-1977)[97)], her drama coach Natasha Lytess (1915-1964)[94)], *menage-a-trois* plays with Elia Kazan and Arthur Miller[90)], as well as Elia Kazan and Marlon Brando[98)].

Though she yearned for children, Marilyn was also careless in her personal habits of cigarette smoking[94)] and excessive use of alcoholic drinks which preempted her desire to carry the pregnancy for a full term. (Table 3)

Received on December 22, 2021 and accepted on January 3, 2022
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Table 3: Doctors associated with the life and death of Marilyn Monroe

Doctor	Life Span	Specialty and link to Marilyn Monroe
[in Life]		
Hyman Engelberg	1913-2005	internist; MM's personal physician
Lee E. Siegel	1909-1990	internist; Medical director at 20th Century Fox Studios, from 1955 to 1971.
Leon Krohn	1906-1983	gynecologist
Mortimer Rodgers	1898-1970	gynecologist
Bernard Berglas	1899-1984	treated MM for a tubal pregnancy in Aug 1957, in New York City.
Eliot Corday	1914-1999	cardiologist
Myron Prinzmetal	1908-1987	cardiologist; MM's physician circa 1952.
Margaret Hohenberg	1898-1992	psychiatrist and psychoanalyst
Marianne Kris	1900-1980	psychiatrist and psychoanalyst
Ralph Greenson	1911-1979	psychiatrist and psychoanalyst
Michael M. Gurdin	1910-1994	plastic surgeon
[in Death]		
Theodore J. Curphey	1897-1986	pathologist; Coroner of Los Angeles County
Thomas Tsunetomi Noguchi	1927 -	pathologist; Coroner of Los Angeles County

Sources: Ref. 92, 94.

Dysmennorhea and Endometriosis

Dysmennorhea is thought to be caused by the release of prostaglandins in the menstrual fluid, causing uterine contractions and pain[99]. That endogenous prostanoids are also involved in sleep-wake balance, according to Hayaishi hypothesis[100-103], makes us postulate that Marilyn might have suffered from prostaglandin imbalance in her brain and reproductive system. Unfortunately for Marilyn, endogenous prostanoid studies in clinical research blossomed only since 1970s[104]. Drug therapies using prostaglandin inhibitors for premenstrual syndrome[105], dysmennorhea[106] and endometriosis[107,108] came to be promoted since 1980s.

That Marilyn suffered from anxiety disorders has been recognized by her peers and biographers. Her predilection to be late for appointments and shooting was attributed to her anxiety concerns by Jane Russell (her co-star in the movie *'Gentlemen Prefer Blondes'*)[109]. It could be that, apart from prostaglandin imbalance, Marilyn also faced a degree of malfunction in the production of endogenous oxytocin. The involvement and relevance of oxytocin hormone in psychiatric disorders such as schizophrenia, mood and anxiety disorders[110] as well as endometriosis-related pain[111] have been recognized recently. One can hypothesize that Marilyn's addition to alcohol and barbiturates could have worsened her balance of brain oxytocin and vasopressin hormones[112]. An empirical evidence for this oxytocin malfunction hypothesis was published recently by Matsumoto *et al*[113]. In a nested case-control study sample of pregnant women (N = 162) with a medical history of anxiety disorder and endometriosis as cases and pregnant women without such medical history as controls adjusted for age and parity, Matsumoto *et al*.[113] found that the plasma oxytocin concentrations were significantly lower in cases suffering from endometriosis in their first, second and third trimesters of pregnancy. Current knowledge on the maternal plasma levels of oxytocin during pregnancy[114] may explain to an extent the recurrent miscarriages and other related gynecological disorders in Marilyn's life.

Bipolar Personality Disorder

Marilyn's suffering from bipolar personality disorder[89] has been observed by three recognized names in the movie industry-namely actor Laurence Olivier, director Billy Wilder, and costume designer William (Billy) Travilla. Laurence Olivier had recorded, "There are two entirely unrelated sides to Marilyn. You would not be far out if you described her as a schizoid; the two people that she was could hardly have been more different."[115]

Those of Billy Wilder's "One side of Marilyn was wonderful, and the other side was terrible. She was two of a kind."[116], and Billy Travilla's "She was for me a dual personality. She was not well educated but an extremely bright woman, and she had the whims of a child."[89] were also identical to that of Olivier's. The two personalities inhabiting Marilyn's body frame could be understood as that of traumatized, orphaned model and starlet Norma Jeane Baker (1926-1949), and the famous movie star Marilyn Monroe (1950-1962).

Table 4: Vital Statistics of Marilyn Monroe, after death

Parameter	Weight / Length
Body Height	166.4 cm
Body Weight	53.1 Kg
Internal Organs	
Heart	300 g
right lung	465 g
left lung	420 g
liver	1,890 g
spleen	190 g
kidneys (both)	350 g
brain	1,440 g

Source: autopsy report signed by Dr. Thomas Noguchi. Ref. 97

Autopsy Report

The six page autopsy report of Marilyn (#81128, dated Aug 5, 1962), released by Thomas Noguchi, Deputy Medical Examiner, of Los Angeles County's Office of Coroner was commented by Smith in a chapter of his book.[97] Vital Statistics of Marilyn, after death, assembled from the autopsy report is presented in Table 4.

The 'Anatomical summary' presented in the autopsy report is as follows:

External Examination:
1. Lavidity of face and chest with slight ecchymosis of the left side of the back and left hip.
2. Surgical scar, right upper quadrant of the abdomen
3. Suprapubic surgical scar.

Respiratory System:
1. Pulmonary congestion and minimal edema.

Liver and Biliary System
1. Surgical absence of gall bladder.
2. Acute passive congestion of liver.

Urogenital System
1. Congestion of kidneys

Digestive System
1. Marked congestion of stomach with petechial mucosal hemorrhage.
2. Absence of appendix.
3. Congestion and purplish discoloration of the colon.

The last mentioned observation of "purplish discoloration of the colon" had been pointed out by observers as a tell-tale sign of inflammatory response of barbiturates overdose, possibly administered by enema that could have resulted in Marilyn's death[97]. Toxicology analysis reported 'pento-barbital level of 12.5mg% in the liver (above fatal dose) and blood chloral hydrate level 8 mg% (above fatal dose)'.[76].

The remaining components of Marilyn's autopsy report [1,084 words] also make interesting reading in composition, and is in public record. As Marilyn was one of the leading sex symbols of 1950s with a well-publicized figure seen in photos, magazine covers and movies, her vital organs (such as breasts, hips, nose, scalp hair, lips, neck etc. and even pubic hair in the genital system) were technically described for posterity by Noguchi. For relevance, we reproduce these autopsy findings verbatim.

"External Examination: The unembalmed body is that of a 36-year old well-developed, well-nourished Caucasian female weighing 117 pounds and measuring 65½ inches in length. The scalp is covered with bleached blond hair. The eyes are blue. The fixed lividity is noted in the face, neck, chest, upper portions of arms and the right side of the abdomen. The faint lividity which disappears upon pressure is noted in the back and posterior aspect of the arms and legs. A slight ecchymotic area is noted in the left hip and left side of lower back. The breast shows

no significant lesion. There is a horizontal 3-inch long surgical scar in the right upper quadrant of the abdomen. A suprapubic surgical scar measuring 5 inches in length is noted.

The conjunctivae are markedly congested; however, no ecchymosis or petechiae are noted. The nose shows no evidence of fracture. The external auditory canals are not remarkable. No evidence of trauma is noted in the scalp, forehead, cheeks, lips or chin. The neck shows no evidence of trauma. Examination of the hands and nails shows no defects. The lower extremities show no evidence of trauma.

Body Cavity: The usual Y-shaped incision is made to open the thoracic and abdominal cavities. The pleural and abdominal cavities contain no excess of fluid or blood. The mediastinum shows no shifting or widening. The diaphragm is within normal limits. The lower edge of the liver is within the costal margin. The organs are in normal position and relationship.

Cardiovascular System: The heart weighs 300 grams. The pericardial cavity contains no excess of fluid. The epicardium and pericardium are smooth and glistening. The left ventricular wall measures 1.1 cm and the right 0.2 cm. The papillary muscles are not hypertrophic. The chordae tendineae are not thickened or shortened. The valves have the usual number of leaflets which are thin and pliable. The tricuspid valve measures 10 cm, the pulmonary valve 6.5 cm, mitral valve 9.5 cm, and aortic valve 7 cm. in circumference. There is no septal defect. The foramen ovale is closed.

The coronary arteries arise from their usual location and are distributed in normal fashion. Multiple sections of the anterior descending branch of the left coronary artery with a 5 cm interval demonstrate a patent lumen throughout. The circumflex branch and the right coronary artery also demonstrate a patent lumen. The pulmonary artery contains no thrombus.

The aorta has a bright yellow smooth intima.

Respiratory System: The right lung weighs 465 grams and the left 420 grams. Both lungs are moderately congested with some edema. The surface is dark red with mottling. The posterior portion of the lungs shows severe congestion. The trachea-bronchial tree contains no aspirated material of blood. Multiple sections of the lungs show congestion and edematous fluid exuding from the cut surface. No consolidation or suppuration is noted. The mucosa of the larynx is grayish white.

Liver and Biliary System: The liver weighs 1890 grams. The surface is dark brown and smooth. There are marked adhesions through the omentum and abdominal wall in the lower portion of the liver as the gallbladder has been removed. The common duct is widely patent. No calculus or obstructive material is found. Multiple sections of the liver show slight accentuation of the lobular pattern; however, no hemorrhage or tumor is found.

Hemic and Lymphatic System: The spleen weighs 190 grams. The surface is dark red and smooth. Section shows dark red homogeneous firm cut surface. The Malpigian bodies are not clearly identified. There is no evidence of lymphadenopathy. The bone marrow is dark red in color.

Endocrine System: The adrenal glands have the usual architectural cortex and medulla. The thyroid glands are of normal size, color and consistency.

Urinary System: The kidneys together weigh 350 grams. Their capsules can be stripped without difficulty. Dissection shows a moderately congested parenchyma. The cortical surface is smooth. The pelves and ureters are not dilated or stenosed. The urinary bladder contains approximately 150 cc. of clear straw-colored fluid. The mucosa is not altered.

Genital System: The external genitalia shows no gross abnormality. Distribution of the pubic hair is of female pattern. The uterus is of the usual size. Multiple sections of the uterus show the usual thickness of the uterine wall without tumor nodules. The endometrium is grayish yellow, measuring up to 0.2 mm in thickness. No polyp or tumor is found. The cervix is clear, showing no nabothian cysts. The tubes are intact. The openings of the fimbria are patent. The right ovary demonstrates recent corpus luteum haemorrhagicum. The left ovary shows corpora lutea and albicantia. A vaginal smear is taken.

Digestive System: The esophagus has a longitudinal folding mucosa. The stomach is almost completely empty. The contents is brownish mucoid fluid. The volume is estimated to be no more than 20 cc. No residue of the pills is noted. A smear made from the gastric contents and examined under the polarized microscope shows no refractile crystals. The mucosa shows marked congestion and submucosal petechial hemorrhage diffusely. The duodenum shows no ulcer. The contents of the duodenum is also examined under polarized microscope and shows no refractile crystals. The remainder of the small intestine shows no grass abnormality. The appendix is absent. The colon shows marked congestion and purplish discoloration. The fecal contents is light brown and formed. The mucosa shows no discoloration.

The pancreas has a ten lobular architecture. Multiple sections shows a patent duct.

Skeletomuscular System: The clavicle, ribs, vertebrae and pelvic bones show no fracture lines. All bones of the extremities are examined by palpation showing no evidence of fracture.

Head and Central Nervous System: The brain weighs 1440 grams. Upon reflection of the scalp there is no evidence of contusion or hemorrhage. The temporal muscles are intact. Upon removal of the dura mater the cerebrospinal fluid is clear. The superficial vessels are slightly congested. The convolutions of the brain are not flattened. The contour of the brain is not distorted. No blood is found in the epidural, subdural or subarachnoid spaces. Multiple sections of the brain show the usual symmetrical ventricles and basal ganglia. Examination of the cerebellum and brain stem shows no gross abnormality. Following removal of the dura mater from the base of the skull and calvarium no skull fracture is demonstrated.

Liver temperature taken at 10:30 am registered 89°F.

Specimen: Unembalmed blood is taken for alcohol and barbiturate examination. Liver, kidney, stomach and contents, urine and intestine are saved for further toxicological study. A vaginal smear is made."[97)]

It could be vaguely inferred that the superficial details provided about Marilyn's genital system [*"The external genitalia shows no gross abnormality. Distribution of the pubic hair is of female pattern. The uterus is of the usual size."*] in the autopsy report were meant to titillate the print and visual media audience of 1962, and can be evaluated as showing shades of indignity. However the finding about the non-appearance of nabothian cyst indicated that Marilyn failed to complete a term pregnancy[117-119)].

Varied Speculations on Death

Marilyn's death is open to conjecture[89)]. Though Los Angeles County's then deputy medical examiner Noguchi delivered a verdict of 'probable suicide', it has been challenged by quite a number of Marilyn's acquaintances in the movie world, biographers and other investigators. John Miner (The Los Angeles County deputy district attorney) who attended the autopsy as an observer had believed that Marilyn was murdered[89,120)]. Miner's 1995 story of a 40 min. 'secret tape' of Marilyn about her private thoughts to her psychiatrist Greenson, (after Greenson's death in 1979)) is not trusted by Marilyn's biographer Summers, because of Miner's assertion that 'Greenson subsequently destroyed the recording'.[121)]. But in 1994, Marlon Brando (who had dated Marilyn) wrote in his autobiography, "The last time we spoke was two or three days before she died....with Marilyn I didn't sense any depression or clue of impending self-destruction during her call. That's why I'm sure she didn't commit suicide I believe I would have sensed something was wrong if thoughts of suicide were anywhere near the surface of Marilyn's mind. I would have known it. Maybe she died because of an accidental drug overdose, but I have always believed that she was murdered"[122)].

As opposed to this view of murder, director John Huston (who had directed Marilyn's last completed movie '*The Misfits*'in 1960 and *The Asphalt Jungle*, a pivotal 1950 movie for Marilyn's career) viewed Marilyn's death as an accident. "Too many sleeping pills ─ a bottle of them at hand and no one there to save her. She'd made this mistake several times before had had received emergency treatment. I'm sure she never meant to take her life."[123)]. One biographer Donald Spotto also proposed the death as an accident, due to an adverse reaction to an enema given by her house keeper Eunice Murray prescribed by psychiatrist Greenson, containing fatal dose of Nembutal and chloral hydrate[124)].

Dr. Noguchi's review of autopsy findings after 24 years

For the November 1986 issue of *Omni magazine*, Noguchi was interviewed by Stein[125)] and his responses to five questions on Marilyn's death were as follows:

"*Question:* With Monroe, wasn't it a question of suicide versus murder: whether the fatal drugs were swallowed or injected?

Noguchi: The autopsy found a large amount of Nembutal and chloral hydrate, but the case wasn't typical because the stomach was empty. I did not see any residue, although the stomach and gastric lining were much reddened. But this is standard for barbiturate abuse. And this was not the first time we'd seen an empty stomach. Like the liver, it gets used to handling the drug and passes it quickly into the small intestine. Because I couldn't find needle marks, I still believe the drugs were swallowed.

Monroe's liver actually had a level of stored barbiturates three to four times that of her blood. Yet her blood level was high enough ─equivalent to about forty or fifty capsules of regular-strength sleeping pills. For the average person, ten to fifteen are potentially lethal.

Question: Even so, doesn't that show that someone, may be her

therapist or nurse, for instance, injected her with these drugs?

Noguchi: This challenge has been made — and even today I don't think we can tell. Some speculate that she may have been injected in a difficult-to-detect area like the scalp.

Question: What about that bruise on her hip that you find so mysterious? Could that have been a cover for a needle track?

Noguchi: What does that bruise mean? I don't know! Your idea is interesting. With an injection you have only minute skin breakage, and of course, after some hours it starts healing. When death occurs shortly after the injection, as with John Belushi, the breakage of the skin is still visible, and by squeezing the skin you can see the blood come out. But in Monroe's case I could not find a needle mark on the bruised area.

Question: You note that her therapist used to inject her. He saw her the day before. Would that give the track time to heal?

Noguchi: I would think so. I think she received an injection from him twenty-four hours prior to her death. There are many mysteries. I recommended that an agency such as a grand jury or D.A.'s office reopen the case.

Question: Why are we so obsessed with how Monroe died?

Noguchi: Perhaps this case keeps returning because she was one of the last superstars and in many ways an American dream. But I think most of our concern and inquiry is really about her relation to the Kennedy brothers. It's this amazing double involvement with those figures, who were as charismatic as she both of whom were assassinated. It should also be noted that in his 1983 memoir examining the tragic deaths of quite a number of Hollywood celebrities, including Marilyn, Noguchi[126] had asserted that the lab technicians had failed to test all the specimens of Marilyn (excluding blood and the liver), which he had submitted for testing because 'the head toxicologist Raymond J. Abernathy, apparently felt there was no need to test any further.' Noguchi also acknowledged, "I didn't follow through as I should have. As a junior member of the staff, I didn't feel I could challenge the department heads on procedures." In the subsequent paragraph, Noguchi had further recorded, "Few weeks later, I asked Abernathy if he had stored the other organs of Monroe's body that I had forwarded to him. If so, we could still test them. I was disappointed when he said, 'I'm sorry, but I disposed of them because we had closed the case,' for I knew the media would charge a cover up. I was right. A variety of murder theories would spring up almost instantly and persist even today."

Thus, in her death Marilyn joins the pantheon of other illustrious historical personalities such as composer Wolfgang Mozart (1756-1791)[127-132] and Emperor Napoleon Bonaparte (1769-1821)[132-135], whose modes of death are still being debated in medical journals.

CONCLUSION

It's unfortunate that Marilyn was served with a horrible genetic disposition, being born to an invalid mother Gladys who suffered from mental disorders, and both maternal grandparents inflicted with brain disorders. Our inference is that Marilyn self-destructed herself by her rash polypharmacy behavior and willfully tampering with her defective gynecological system. Based on current knowledge of endogenous prostanoids, and oxytocin we propose that the fundamental cause of Marilyn's morbidity could have been imbalances in prostaglandin and oxytocin in the brain and reproductive system that made her sick with insomnia and gynecological symptoms such as dysmenorrhea and endometriosis.

CONFLICT OF INTEREST AND FUNDING

None

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